
PROJECT MANUAL

**PLAINEDGE UNION FREE SCHOOL DISTRICT
CAPITAL IMPROVEMENT PROJECT
AT THE**

JOHN H. WEST ELEMENTARY SCHOOL

SED No.: 28-05-18-03-0-011-023

CHARLES E. SCHWARTING ELEMENTARY SCHOOL

SED No.: 28-05-18-03-0-002-023

EASTPLAIN ELEMENTARY SCHOOL

SED No.: 28-05-18-03-0-004-024

PLAINEDGE MIDDLE SCHOOL

SED No.: 28-05-18-03-0-009-013

LIBRARY MEDIA CENTER RENOVATIONS

CONTRACT G-1 GENERAL CONSTRUCTION



Mark Design Studios Architecture, PC

270 North Broadway, Hicksville, New York 11801

ADDRESS ALL COMMUNICATIONS REGARDING THIS PROJECT TO THE ARCHITECT

THE DESIGN OF THIS PROJECT CONFORMS TO ALL APPLICABLE PROVISIONS OF THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE, THE NEW YORK STATE ENERGY CONSERVATION CODE, AND THE BUILDING STANDARDS OF THE NEW YORK STATE EDUCATION DEPARTMENT.

ARCHITECT: MICHAEL MARK, R.A.
LICENCE #033516
EXPIRATION DATE: 11/30/2023

ASBESTOS DESIGNER: MICHAEL MARK, R.A.
ASBESTOS CERTIFICATE #13-14822
EXPIRATION DATE: 12/2023

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¹MUST BE INCLUDED IN SUBMITTED BIDS

NOTICE TO BIDDERS

The Board of Education of the Plainedge Union Free School District invites the submission of Sealed Bid Proposals to furnish materials and labor to complete the Library Media Center Renovation & Site Improvements at John H. West Elementary School, Charles E. Schwarting Elementary School, Eastplain Elementary School and Plainedge Middle School in accordance with the plans and specifications for the following category(ies) of work:

PLAINEDGE UNION FREE SCHOOL DISTRICT CAPITAL IMPROVEMENT PROJECT

Library Media Center Renovations Bid #24-002

**John H. West Elementary School
Charles E. Schwarting Elementary School
Eastplain Elementary School
Plainedge Middle School**

CONTRACT G-1: GENERAL CONSTRUCTION

Sealed Bid Proposals will be received **until 11:00AM prevailing time on May 2, 2025** at the School District Administration Office, 241 Wyngate Drive, N. Massapequa, N.Y. 11758, at which time and place the bids will be publicly opened and read aloud. Any bid may be withdrawn without prejudice prior to the official bid opening time or any publicized postponement thereof. Any bid received after the time and date stated above will be returned to the bidder unopened. Bidders are solely responsible for the arrival of each bid at the School District Administration Office by the appointed time, regardless of the means of delivery.

Bids must be presented on the standard bid proposal form(s) in the manner designated therein and as required by the Specifications. All bids must be addressed to the Purchasing Agent, Justine Stringer, District Administration Building, 241 Wyngate Drive, N. Massapequa, N.Y. 11758. All bids shall be sealed and in an opaque envelope that is distinctly marked on the outside as follows: **"Bid #24-002, Library Media Center Renovation & Site Improvements at John H. West Elementary School, Charles E. Schwarting Elementary School, Eastplain Elementary School and Plainedge Middle School"** as required by the Bid Specifications. The name of the bidder, bidders address, and the name of the contract, and/or contracts being bid must also appear on the outside of the envelope.

The Contract Documents may be examined at the Office of the Architect, **Mark Design Studios Architecture, PC**, 270 North Broadway, Hicksville New York, 516-827-0240 (phone) during the hours of 9:00 a.m. to 4:00 p.m. excluding holidays. Bidders are encouraged to call ahead; however

the Contract Documents may only be obtained through the Office of REVplans, 28 Church Street, Unit #7, Warwick, New York 10990 (877-272-0216) beginning on **April 9, 2025**. Complete digital sets of Contract Documents shall be obtained online (with a free user account) as a download for a non-refundable fee of One Hundred (\$100.00) Dollars at the following website: revplans.biddyhq.com under 'public projects'. Optionally, in lieu of digital copies, hard copies may be obtained directly from REVplans upon a deposit of One Hundred (\$100.00) Dollars for each complete set. Checks for deposits shall be made payable to **Plainedge Union Free School District**, and may be uncertified. Plan deposit is refundable in accordance with the terms of the 'Information For Bidders' to all submitting bids. Bidding Document costs are refundable provided the documents are returned to REVplans within thirty (30) days of the Bid Opening, and are COMPLETE, UNMARKED and in NOT TORN condition. Any bidder requiring printed documents to be shipped shall make arrangements with the printer and pay for all packaging and shipping costs.

All bid addenda will be transmitted to registered plan holders via email and will be available at the above. Any bidder requiring documents to be shipped shall make arrangements with the printer and pay for all packaging and shipping costs. Plan holders who have obtained hard copies of the bid documents will need to make the determination if hard copies of the addenda are required for their use, and coordinate directly with the printer for hard copies of addenda to be issued. There will be no charge for registered plan holders to obtain hard copies of the bid addenda. The bid deposit for hard copies will be returned upon receipt of plans and specifications, in good condition, within thirty days after bid date, except for the lowest responsible bidder, whose check will be forfeited upon the award of the contract.

A Pre-Bid conference and walk-through will be held promptly at **12:00 noon on April 17, 2025** at **Charles E. Schwarting Elementary School**, located at 1 Flower Road, Massapequa, NY 11758, at **12:45 pm** at **Eastplain Elementary School**, located at 301 N. Delaware Ave, North Massapequa, NY 11758, at **1:30 pm** at **John H. West Elementary School**, located at 499 Boundary Ave, Bethpage, NY 11714 and at **2:15 pm** at the **Plainedge Middle School**, located at 200 Stewart Ave, Bethpage, NY 11714. All bidders shall meet at the front entrances of the schools. Prospective bidders are strongly encouraged to attend. **Knowledge of the site is crucial to obtain a proper understanding of the Work. All bidders must be fully familiar with the sites.** Bidders shall visit the sites of proposed work and be fully familiarized with conditions as they exist, as well as the character of the operations to be carried on under the proposed contract. All visits must be scheduled & coordinated with Brett Prochazka, Director of Facilities, at (516) 992-7422 or by email to Brett.Prochazka@plainedgeschools.org.

Each bid must be accompanied by a certified check payable to PLAINEDGE UNION FREE SCHOOL DISTRICT or by a Bid Bond in an amount equal to ten percent (10%) of the bid conditioned as set forth in the "Information for Bidders" of the Bid Specifications. All bid security, except those of the three lowest bidders will be returned within ten (10) days after bids are submitted. The bid security provided by the three lowest bidders will be returned after the execution of the Trade Contract. The District will require the successful bidder to provide

separate Performance and Labor & Materials Payment Bonds in the amount of the contract price and in the form specified in the Bid Documents.

Each Bidder shall prepare their bid proposal, along with a bid security, in accordance with the terms and subject to the conditions set forth in the "Information for Bidders" and Bid Specifications. Attention of bidders is particularly called to the minimum wage rates to be paid under the contracts. Wages to workers, laborers and mechanics employed to work on this project shall be paid in accordance with Section 220 of the Labor Law and in accordance with the Prevailing Rate Schedules found in the Project Manual. Proof of such payments will be required.

The District reserves the right to award a contract to the lowest responsible bidder providing the required security within forty-five (45) days of the date opening of the bids. To the fullest extent allowed by law, the District further reserves the right to reject bids that contain conditions, omissions, exceptions or modifications, or in its sole discretion to waive any irregularities in the bids, or to reject any or all bids, or to accept any bid which in the opinion of the District is in its best interest.

By Order of Board of Education
Plainedge Union Free School District
Maureen Ryan, District Clerk

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INSTRUCTIONS TO BIDDERS

1. SUBMISSION OF BIDS:

- A. The Owner reserves the right to consider informal any bid not prepared and submitted in accordance with the provisions of this Instructions to Bidders, Bid Specifications and the General Conditions and to waive any informalities in or to reject any or all bids either before or after the bid opening. No bidder may withdraw a bid within forty-five (45) days after the actual date of the bid opening except as permitted by General Municipal Law section 103(11).

2. PREPARATION OF PROPOSAL:

- A. Bidders shall prepare their bids on the "Bid" sheets furnished by the Architect and available at the website: www.revplans.com as set forth in the Notice to Bidders. All blank spaces pertinent to the contract category proposal must be filled in, in both words and figures for the lump sum for which the proposal is made.
- B. In accordance with the Notice to Bidders, all bids, together with bid security, must be submitted in sealed envelopes bearing on the outside of the envelope: the name of the bidder; the bidder's address; the name of the project; and category of work covered by the bid; addressed to the Plainedge UFSD Purchasing Agent; and clearly marked on the outside: **Bid # 00-000**. Each bidder shall assume the risk of any delay in the mail or in handling of mail by employees of the Owner or others.
- C. The within contract seeks bids from a single prime contractor. **Each bidder shall submit with its bid a separate sealed list that names each subcontractor that the bidder will use to perform work on the contract, and the agreed-upon amount to be paid for each, for: (a) plumbing and gas fitting, (b) steam fitting, hot water heating, ventilating and air conditioning apparatus and (c) electric wiring and standard illuminating fixtures.** After the low bid is announced, the sealed list of subcontractors submitted with such low bid shall be opened and the names of such subcontractors shall be announced, and thereafter any change of subcontractor or agreed-upon amount to be paid to each shall require the approval of the school district, upon a showing presented to the school district of legitimate construction need for such change, which shall be open to public inspection. Legitimate construction need shall include, but not be limited to, a change in project specifications, a change in material costs, a change to subcontractor status as determined pursuant to paragraph (e) of subdivision two of section two hundred twenty-two of the labor law, or the subcontractor has become otherwise unwilling, unable or unavailable to perform the subcontract. The sealed list of subcontractors submitted by all other bidders shall be returned to them unopened after the contract award.
- D. **IMPORTANT:** In the event that a prospective bidder, after securing drawings and specifications, decides not to present a proposal for the work, it is requested that the Architect be so notified at the earliest possible moment prior to the date of receipt of bids. All drawings and specifications shall be returned to the Architect's Office.

INSTRUCTIONS TO BIDDERS

3. BID PROPOSALS AND BIDDERS:

- A. The Owner reserves the right to reject any or all bid proposals and to waive any informalities or defects in such proposals either before or after the time of opening of bids.
- B. Bidders may not withdraw proposals within forty-five (45) days following date of opening of bids except as permitted by General Municipal Law section 103(11).
- C. All costs in connection with preparation and submission of bid proposals shall be borne by the bidders.
- D. Bidders shall submit promptly, upon request of the Owner or Architect, documentary evidence as to financial, technical, and practical ability to carry out the work.

4. QUALIFICATIONS OF BIDDERS

Bidders will be required to present documentation attesting that they:

- A. Have financial capability to produce and execute the project within the time periods specified.
- B. Possess a minimum of five (5) years continuous experience as a firm doing business under the same name, engaged principally as a contractor for the work proposed.
- C. Have completed at least five similar projects, listing type and scope of work, names and addresses of owners and dates of contract completion. The District has the right to verify the documentation as well as examine other aspects of the bidder's work record.
- D. Can provide tabulation of equipment and facilities at their disposal to do this work.
- E. Have a current bonding capacity to accommodate proposed work.
- F. Have the experienced staff and technical organization for the project.
- G. Maintain an office with full-time employees in a commercial space.
- H. Intend to complete at least 25 percent of the Work with their own forces. General Conditions, Mobilization, etc. shall not count toward the 25 percent.
- I. The Bidder is not currently involved in bankruptcy proceedings.
- J. The Bidder is licensed to perform the work they are bidding on in the jurisdiction the work will take place.
- K. The Contractor and each Subcontractor must have a minimum of five (5) years experience in the work and/or applicable trade they will provide with their own forces.

INSTRUCTIONS TO BIDDERS

- L. The bidder shall provide a complete schedule of values inclusive of all equipment, systems, etc. Any and all items related to this project shall be indicated on the A.I.A. Document G703 as enclosed after this page, in addition to any items that the Contractor may include.
- M. In accordance with the requirements of General Municipal Law §103-g, the bidder is required to include with its bid either (1) the "Certification of Compliance with the Iran Divestment Act" or, in the case where the bidder is unable to make such certification, (2) the form titled, "Declaration of Bidder's Inability to Provide Certification of Compliance with the Iran Divestment Act".
- N. The bidder is required to complete the "Qualifications for Bidder's" and "Statement of Bidder's Qualifications" forms contained herein. **(These forms must be submitted with the Bid Proposal Form)**
- O. It is assumed that in preparing this bid, the Bidder has already compiled these instructions, and that it is being made available for reference with completing this package. All instructions contained above in Items A through N is required to be submitted to the Architect prior to award of contracts. Failure to provide these instructions may result in disqualification of bidder.

5. BID SECURITY:

- A. Each bid must be accompanied by certified check of the bidder or by a bid bond prepared on a standard approved form, duly executed by the bidder as principal, and having as surety thereon a surety company authorized to do business within the State of New York.
- B. Bid security shall be in an amount not less than 10% of the base bid and alternates or not less than 10% of the sum of base bids and alternates where such base bids may be considered cumulative. Such bid security will be returned to all, except the three lowest formal bidders, within ten days after the formal opening of bids and the remaining bid security will be returned to the three lowest bidders within 48 hours after the Owner and the accepted bidder have executed a contract. If no contract has been so executed within 45 days after the opening of bids, bid security will be returned upon demand of the bidder at any time thereafter so long as he has not been notified of the acceptance of his bid.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT:

- A. The successful bidder, upon its failure or refusal to execute and deliver the contract, bonds and insurance required within 10 days after the Bidder received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with its bid, as specified in paragraph 5.

7. CONDITIONS OF WORK:

- A. Each bidder must inform himself fully of the conditions relating to the construction and labor under which the work is now being or will be performed. Failure to do so will not relieve a successful bidder of his obligations to furnish all material and labor

INSTRUCTIONS TO BIDDERS

necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid.

- B. Insofar as possible, the Contractor in the carrying out of his work must employ such methods or means as will not cause an interruption of or interference with the work of any other contractor.

8. ADDENDA AND INTERPRETATIONS:

- A. No interpretations of the meaning of the plans, specifications or other contract documents will be made to any bidder orally. All questions must be submitted in writing and received no later than **5:00 PM on the 7th calendar day prior to bid opening**. Questions received after the deadline will not receive a response prior to the bid opening. Every question for such interpretations shall be in writing, addressed to MARK DESIGN STUDIOS ARCHITECTURE PC, 270 North Broadway, Hicksville, NY 11801. Email RFI's to BOTH Kristen@markdesignstudios.com and fiona@markdesignstudios.com.
- B. Any and all such interpretations and any supplemental instruction will be in the form of Addenda.
- C. All bid addenda will be transmitted from Mark Design Studios Architecture PC to registered plan holders via email. Plan holders who have paid for hard copies of the bidding documents will need to make the determination if hard copies of the addenda are required for their use, and coordinate directly with the District for hard copies of addenda to be issued. There will be no charge for registered plan holders to obtain hard copies of the bid addenda.

9. SECURITY FOR FAITHFUL PERFORMANCE:

- A. Simultaneously with its delivery of the executed contract, the successful bidder must deliver to the Owner three (3) copies of an executed payment and performance bond in accordance with the requirements of Article 11 of the General Conditions of the Contract for Construction.

10. STATE LAWS RULES AND REGULATIONS:

- A. The Contractor and each and every subcontractor performing the work at the site of the project to which this contract relates shall comply with the applicable provisions of the "Labor Law", as amended, of the State of New York, and all other applicable laws rules and regulations governing such activities.

11. OBLIGATION OF BIDDER:

- A. At the time of the opening of bids, each bidder will be presumed to have read and to be thoroughly familiar with the drawings and contract documents including all addenda. The failure or omission of any bidder to receive or examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect to his bid.
- B. Bidders shall be presumed to have visited the site prior to submission of proposals and to have familiarized themselves with surface and subsurface conditions,

INSTRUCTIONS TO BIDDERS

existing structures and any and all conditions that may in any way affect the work. Failure to have so acted shall in no way relieve bidders from any obligations in respect to their bids.

- C. If the bidder, prior to the submission of its bid, fails to notify the Architect in writing of the existence of any condition, ambiguity, inconsistency or error in any of the contract documents, or of a conflict between provisions in a contract document and provisions of a State Law or any applicable code, its bid will be conclusively presumed to have been based upon the interpretation of such ambiguity or inconsistency, or the directions correcting such error or conflict which may subsequently be given by the Architect.

12. EXEMPTION FROM SALES AND COMPENSATING USE TAXES:

- A. The Owner is exempt from payment of sales and compensation use taxes of the State of New York and of cities, counties and other subdivisions of the State, for materials sold to it pursuant to the provisions of this contract. These taxes are not to be included in bids.
- B. Contractor's purchases of tangible personal property which does not become an integral component part of the exempt organization's real property, and are consumed by the Contractor as well as purchases of taxable services, are subject to tax.

13. TIME OF COMPLETION:

- A. Bidders are advised that time of completion is of the essence and shall be taken into account by the bidders in the preparation of the proposals.
- B. Contractor shall complete work within 90 calendar days from Notice to Proceed.
- C. Final Completion for all Contracts must be reached no later than **August 29, 2025**. Failure to do so will subject the Contractor to liquidated damages as set forth in the General Conditions.

14. POST BID INFORMATION (PBI):

- A. Within 96 hours of the bid opening, the apparent low bidder shall furnish in writing, the following information to the Architect:
 - 1) Preliminary progress schedule showing dates for major elements of construction and dates by which major sub-contracts will be awarded.
 - 2) List of proposed major subcontractors to the extent not already provided as set forth in Paragraph 2(C) herein.
 - 3) List of MAJOR manufacturers and products.

15. EQUIVALENTS/ SUBSTITUTIONS:

- A. **EQUIVALENTS:** The Bidder, at any time, may propose to use in the work an equivalent item in lieu of that specified with NO CHANGE to the Bid Amount. The Bidder, proposing to utilize this equivalent procedure, shall provide a detailed descriptive submission of the proposed material, equipment, or method being

INSTRUCTIONS TO BIDDERS

offered as equal to those specified, including an explanation of all deviations from the product specified in the Contract Documents. The Bidder is responsible to prove equality and, in that regard, shall supply all additional information requested by the Architect, as well as pay for any required testing to support these claims. See Article 6, Paragraph W of the General Conditions for additional requirements.

Further, the Architect is to be the sole judge of product equivalency for the purpose intended, considering equality, workmanship, aesthetics, services, maintenance, economy, and reliability of operation.

If the Contractor has used equivalents as the basis of the bid, the Contractor shall provide the listing of equivalents as an attachment to the Bid Form. The risk of whether proposed equivalents are accepted is borne by the Bidder.

- B. SUBSTITUTIONS: For consideration by the Owner, the Bidder may propose to use in the work substitute items in lieu of those specified, which do not meet the project performance and quality criteria, and can be furnished and installed at a reduced cost (credit) to the Owner with no impact on the work being done by others.
1. Proposed substitutions must be submitted with the bid on the Proposed Substitution Form, which is in the Project Manual following the Proposed Equivalent Form. The Bidder must list any and all deviations from the Contract Documents as well as the corresponding credit amount to be deducted from the Base Bid Proposal if the substitution is accepted by the Owner. This does not exclude the bidder from submitting a substitution for consideration after the award of contract.
 2. Substitutions cannot be used as the basis of the bid, they must be listed separately and will be evaluated on a case by case basis. All base bid amounts must be based on the specified materials or acceptable equivalents.
 3. In no way will the proposed substitutions influence the successful bidder selection process. Substitutions may not be used to arrive at the lowest qualified bid amount.
 4. If a substitutions is accepted, the Bidder shall coordinate the installation of the substitute and make all associated changes required. The Bidder also waives any claim for additional cost associated with the substitute which becomes apparent before, during, or after installation. The Bidder agrees to bear any and all additional costs to all other contractors or subcontractors which are caused by the incorporation of the substitution.
 5. See Article 6, Paragraph X of the General Conditions for additional requirements.

INSTRUCTIONS TO BIDDERS

16. SUBCONTRACTORS:

- A. Subcontractors must be persons or firms that perform work with persons either in their direct employ or over whom they have personal and direct supervision.
- B. Requests for approval of major subcontractors, and other subcontractors as may be designated by the Architect, shall include a written statement by the proposed subcontractor that delivery and installation of materials and equipment can and will be performed in accordance with the approved progress schedule.
- C. The successful bidder must comply with the provisions of Article 5 of the General Conditions of the Contract for Construction concerning the use of subcontractors on the project.

17. MINIMUM WAGE RATE SCHEDULE:

- A. Wage Rates: In accordance with Section 220, Subdivision 3, and 220-D of the New York State Labor Law, there shall be paid each employee engaged in work on the project under this contract in the trades or occupations on the following list, not less than the prevailing rate set for the trade or occupation in which he is engaged.
- B. Unlisted Wage Rates: In the event that Contractor wishes to employ occupations other than listed, he shall request the establishment of a rate for that occupation and he shall pay the rate so established. This payment shall be retroactive if applicable.
- C. Wage Rate Re-determination: New Wage Rates may be re-determined during the course of work under this contract by the New York State Department of Labor; Contractors shall use the re-determined Wage Rates when applicable and shall compensate for this increase in their bid proposal. The contract will not be changed nor will the Owner pay for any Wage Rate increases after the agreements have been signed.
 - 1) In any event, EACH BIDDER shall comply with and shall use the current Wage Rate Schedule for wages to be paid to workers.
- D. Requested Wage Rate Schedules: Wage Rate Schedule has been requested of New York State - Department of Labor, and a full copy of the Schedule can be obtained online from the Department of Labor Website at <https://apps.labor.ny.gov/wpp/doFindProject.do> by entering the PRC Number listed on the Prevailing Wage Schedule cover sheet on the next page. Hard copies of the Prevailing Wage Schedule will be provided to all contractors after award, if not included in these specifications.

18. EXAMINATION OF BUILDING:

- A. Pre-Bid conference and walk through shall be conducted in accordance with the Notice to Bidders.

INSTRUCTIONS TO BIDDERS

19. REQUIRED BID INFORMATION:

A. The following information must be submitted with each bid to be considered a complete and responsive bid. Failure to include any required document in the bid submission may lead to disqualification of your bid, at the sole discretion of the Owner.

- 1) Bid Form 00300 – Original plus 1 copy
- 2) List of Subcontractors 00301 – Provide in a sealed envelope along with bid. See Paragraph 2(C) of the Instructions to Bidders.
- 3) Non-Collusive Form, signed and notarized
- 4) Hold Harmless Agreement
- 5) Insurance Coverage Certification
- 6) Labor Law 220-i Certification
- 7) Sexual Harassment Prevention Certification Form
- 8) Iran Divestment Act Form (Compliance or Inability), signed and notarized
- 9) Form of Disclosure
- 10) Owner Contractor Agreement
- 11) Fully Completed Qualifications of Bidders/ Statement of Bidder's Qualifications Form with relevant support documentation.
- 12) Certification of Inspection for Installation 00495
- 13) Bid Bond

20. CONTRACT AWARD:

- A. Award will be made to the bidder(s) whose bid proposal results in the lowest cost for the provision of the work specified herein. The Owner reserves the right to make one award on a total of all items (Total Base Bid) or separate awards by individual item or group of items, by adding to or deducting from those base bid(s), additive or deduct, alternates, if any, which the Owner elects to accept after the opening of the bids in the best interest of the Owner.
- B. Bidder acknowledges that its bid is an offer to contract, and that the Owner's award of the contract is an acceptance of the Bidder's offer, thereby forming a binding agreement between the parties.

**BID FORM
CAPITAL IMPROVEMENT PROJECT**

**LIBRARY MEDIA CENTER RENOVATIONS
JOHN H. WEST ELEMENTARY SCHOOL, CHARLES E. SCHWARTING ELEMENTARY SCHOOL,
EASTPLAIN ELEMENTARY SCHOOL, PLAINEDGE MIDDLE SCHOOL**

PROJECT TITLE: **PLAINEDGE UNION FREE SCHOOL DISTRICT
JOHN H. WEST ELEMENTARY SCHOOL
CHARLES E. SCHWARTING ELEMENTARY SCHOOL
EASTPLAIN ELEMENTARY SCHOOL
PLAINEDGE MIDDLE SCHOOL
LIBRARY MEDIA CENTER RENOVATIONS**

SED

PROJECT Number(s): #28-05-18-03-0-011-023, #28-05-18-03-0-002-023,
#28-05-18-03-0-004-024, #28-05-18-03-0-009-013

BID TO: BOARD OF EDUCATION
PLAINEDGE UNION FREE SCHOOL DISTRICT
241 WYNGATE DRIVE, NORTH MASSAPEQUA, N.Y. 11758

PRIME CONTRACT: <u><i>Library Media Center Renovation & Site Improvements Contract G-1: General Construction Work (GC)</i></u>

BIDDER:

Address:

Federal ID No.:

Telephone:

Facsimile:

e-mail:

The bidder, in compliance with your NOTICE TO BIDDERS, and INSTRUCTIONS TO BIDDERS for the Project titled above, having examined the Documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the proposed Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the Work required under the Proposed Contract Documents, of which this proposal becomes a part thereof.

The undersigned declares that he/she has received and examined the following addenda:

Addendum No. ____ Dated: _____

Addendum No. ____ Dated: _____

Addendum No. ____ Dated: _____

**BID FORM
CAPITAL IMPROVEMENT PROJECT**

**LIBRARY MEDIA CENTER RENOVATIONS
JOHN H. WEST ELEMENTARY SCHOOL, CHARLES E. SCHWARTING ELEMENTARY SCHOOL,
EASTPLAIN ELEMENTARY SCHOOL, PLAINEDGE MIDDLE SCHOOL**

PRIME CONTRACT: <u>Library Media Center Renovations</u> <u>Contract G-1: General Construction Work (GC)</u>

1.0 BID PROPOSALS: CONTRACT VALUES

NOTE: Bidders must provide the cost for each of the line items set forth below. Failure to complete in its entirety will result in rejection of the bid. Show amount of BASE BID in both words and figures; in case of discrepancy between words and figures shown the amount shown in words will govern.

The bidder shall also provide and attach a complete schedule of values inclusive of all equipment, systems, etc. Any and all items related to this project shall be indicated on the A.I.A. Document G703 or equivalent, in addition to any items that the Contractor may include.

The General Construction (GC) bidder (identified above) hereby certifies that he has examined and fully understands the requirements and intent of the BIDDING AND CONTRACT DOCUMENTS, including Drawings, Project manual, and Addenda; and proposes to furnish all labor, material, and equipment necessary to complete the Work, or before, the dates specified in the Contract Documents for the BID sums as follows:

**CONTRACT NO. G-1A: JOHN H. WEST ELEMENTARY SCHOOL
BASE BID TOTAL**

_____	(\$	_____	)
Words		Figures	

**CONTRACT NO. G-1B: CHARLES E. SCHWARTING ELEMENTARY SCHOOL
BASE BID TOTAL**

_____	(\$	_____	)
Words		Figures	

**CONTRACT NO. G-1C: EASTPLAIN ELEMENTARY SCHOOL
BASE BID TOTAL**

_____	(\$	_____	)
Words		Figures	

**BID FORM
CAPITAL IMPROVEMENT PROJECT**

**LIBRARY MEDIA CENTER RENOVATIONS
JOHN H. WEST ELEMENTARY SCHOOL, CHARLES E. SCHWARTING ELEMENTARY SCHOOL,
EASTPLAIN ELEMENTARY SCHOOL, PLAINEDGE MIDDLE SCHOOL**

**CONTRACT NO. G-1D: PLAINEDGE MIDDLE SCHOOL
 BASE BID TOTAL**

	(\$ _____)
Words	Figures

**CONTRACT NO. G-1: TOTAL COMBINED BID
 TOTAL BASE BID - CONTRACTS G-1A + G-1B + G-1C
 + G-D, including any *voluntary* discount if awarded
 both.**

	(\$ _____)
Words	Figures

1.1 BID PROPOSALS: GENERAL

- A. Bidder agrees to perform all work for all trades described in the Contract Documents for General Construction Work for the above referenced project.
- B. Contractor shall include in the bid amounts all basic insurance bonds, allowances, and requirements of the conditions of the Contract and work specified.

1.2 GENERAL – CERTIFICATION

The Bidder certifies that the total amount bid includes all work required for full completion of the work as described in the plans and specifications and addenda, if any. As set forth in paragraph 2(C) of the Instructions to Bidders section, **the bidder “shall submit with its bid a separate sealed list of names of each subcontractor that the bidder will use to perform the work on the contract, and the agreed-upon amount to be paid for each, for: (a) plumbing and gas fitting; (b) steam fitting, hot water, heating, ventilation and air conditioning apparatus; and (c) electric wiring and standard illuminating fixtures.” In addition, the Bidder shall submit all documents required with its bid as set forth in paragraph 19 of the Instructions to Bidders section.**

1.3 TIME OF COMMENCEMENT & COMPLETION OF WORK

- A. Bidder agrees to start the work immediately upon award of the contract and complete the work, including all alternates, as noted below:

Start of Construction	Upon Contract Signing
Substantial Completion	August 15, 2025

**BID FORM
CAPITAL IMPROVEMENT PROJECT**

**LIBRARY MEDIA CENTER RENOVATIONS
JOHN H. WEST ELEMENTARY SCHOOL, CHARLES E. SCHWARTING ELEMENTARY SCHOOL,
EASTPLAIN ELEMENTARY SCHOOL, PLAINEDGE MIDDLE SCHOOL**

Final Completion

August 29, 2025

Bidder represents and warrants that the work will be substantially completed by **August 15, 2025** the Bidder further understands and agrees that failure to complete said work by the completion date will result in the assessment of liquidated damages as set forth at Article 13 of the General Conditions.

On acceptance of the bid for the work, the undersigned hereby binds himself/herself/themselves to enter into a written contract with the Board of Education within ten (10) days of the notice of award, and to comply in all respects with the requirements and provisions set forth in the Instructions to Bidders and General Conditions in relation to security for the faithful performance of the terms of said contract.

Award will be made to the bidder(s) whose bid proposal results in the lowest cost for the provision of the work specified herein. The Owner reserves the right to make one award on a total of all items (BASE BID) or separate awards by individual item or group of items, by adding to or deducting from those base bid(s), additive or deduct, alternates, if any, which the Owner elects to accept after the opening of the bids in the best interest of the Owner.

(Seal of Corporation if a Corporation)

Signature

Address

Print Name

Title

Company Name

Date

**BID FORM
CAPITAL IMPROVEMENT PROJECT**

**LIBRARY MEDIA CENTER RENOVATIONS
JOHN H. WEST ELEMENTARY SCHOOL, CHARLES E. SCHWARTING ELEMENTARY SCHOOL,
EASTPLAIN ELEMENTARY SCHOOL, PLAINEDGE MIDDLE SCHOOL**

Note: All items listed below must be attached to this form and included with bids. Any items not included may result in the rejection of the bid as incomplete.

BID SUBMISSION CHECKLIST: ☒ IF INCLUDED

- ☐ Bid Form 00300 – Original
- ☐ Bid Form 00300 – 1 Copy
- ☐ 00301 List of Sub-Contractors
- ☐ Non-Collusive Form, signed and notarized
- ☐ Hold Harmless Agreement
- ☐ Insurance Coverage Certification
- ☐ Labor Law 220-i Certification
- ☐ Sexual Harassment Prevention Certification Form
- ☐ Iran Divestment Act Form (Compliance or Inability), signed and notarized
- ☐ Form of Disclosure
- ☐ Owner Contractor Agreement
- ☐ Fully Completed Qualifications of Bidders/Statement of Bidder's Qualifications Form.
- ☐ Certification of Inspection for Installation 00495
- ☐ Bid Bond

BIDDER:

Address:

Federal ID No.:

Telephone:

Facsimile:

e-mail:

**LIST OF SUB-CONTRACTORS
CAPITAL IMPROVEMENT PROJECT**

**LIBRARY MEDIA CENTER RENOVATIONS
JOHN H. WEST ELEMENTARY SCHOOL, CHARLES E. SCHWARTING ELEMENTARY SCHOOL,
EASTPLAIN ELEMENTARY SCHOOL, PLAINEDGE MIDDLE SCHOOL**

PROJECT TITLE: **PLAINEDGE UNION FREE SCHOOL DISTRICT
JOHN H. WEST ELEMENTARY SCHOOL
CHARLES E. SCHWARTING ELEMENTARY SCHOOL
EASTPLAIN ELEMENTARY SCHOOL
PLAINEDGE MIDDLE SCHOOL
LIBRARY MEDIA CENTER RENOVATIONS**

SED

PROJECT Number(s): #28-05-18-03-0-011-023, #28-05-18-03-0-002-023,
#28-05-18-03-0-004-024, #28-05-18-03-0-009-013

BID TO: BOARD OF EDUCATION
PLAINEDGE UNION FREE SCHOOL DISTRICT
241 WYNGATE DRIVE, NORTH MASSAPEQUA, N.Y. 11758

PRIME CONTRACTOR: _____

SUB-CONTRACTORS:

1. Trade: Plumbing & Gas Fitting

Sub-Contractor Name: _____
(Please Print)

Contract Amount: _____
(Please Print)

2. Trade: Steam fitting, hot water, heating, ventilation and air conditioning apparatus

Sub-Contractor Name: _____
(Please Print)

Contract Amount: _____
(Please Print)

3. Trade: electric wiring and standard illuminating fixtures

Sub-Contractor Name: _____
(Please Print)

Contract Amount: _____

Signature of Bidder: _____
(Signature of Bidder or authorized Representative of a corporation)

Submit in separate sealed envelope with Bid.

END OF SECTION

NON-COLLUSIVE FORM
BID PROPOSAL CERTIFICATIONS

Firm Name _____

Business Address _____

Telephone Number _____ Date of Bid _____

I. General Bid Certification

The bidder certifies that he will furnish, at the prices quoted, the materials, equipment and/or services as proposed on this Bid.

II. Non-Collusive Bidding Certification

The following statement is made pursuant to Section 103-D of the General Municipal Law, as amended by Chapter 675 of the Laws of 1966, and Section 139-D of the State Finance Law, as amended by Chapter 675 of the Laws of 1966, and Section 2604 of the Public Authorities Law, as amended by Chapter 675 of the Laws of 1966.

By submission of this bid proposal, the bidder certifies that he/she is complying with Section 103-d of the General Municipal Law as follows:

Statement of non-collusion in bids and proposals to political subdivision of the state. Every bid or proposal hereafter made to a political subdivision of the state or any public department, agency or official thereof where competitive bidding is required by statute, rule, regulation, or local law, for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement subscribed by the bidder and affirmed by such bidder as true under the penalties of perjury:

Non-collusive bidding certification.

(a) By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

1. The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
2. Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be

disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and,

3. No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

- (b) A bid shall not be considered for award nor shall any award be made where (a) (1) (2) and (3) above have not been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the reasons therefor. Where (a) (1) (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department agency or official thereof to which the bid is made or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph one (a).

Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certifications referred to in subdivision II of this section, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing, and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of corporation.

The bidder affirms the above statement as true under the penalties of perjury.

Signature of Bidder: _____
(Signature of bidder or authorized representative of a corporation)

Title: _____

Sworn to before me this _____ day
of _____, 20____

Notary Public

HOLD HARMLESS AGREEMENT

In accordance with Article 12 of the General Conditions ("Indemnification"), the Contractor agrees as follows to the following indemnification obligations under its Agreement with the Owner:

A. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board and agents; and (2) the Architect and its consultants, employees, officers and agents; from and against any and all claims, damages, losses, suits, obligations, fines, penalties, costs, charges, and expenses, including but not limited to attorney's fees, which may be imposed upon or incurred by or asserted against any of them by reason of any act or omission of such contractor or any of its subcontractors or any person or firm directly or indirectly employed by such contractor, for the act(s) and/or omission(s) of any contractor or subcontractor in connection with the work of the Project.

B. To the fullest extent permitted by law, the Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board, and agents; and (2) the Architect and its consultants, employees, officers, and agents from and against claims, damages, losses, and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of its work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction, of tangible property including loss of use resulting therefrom, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a SubContractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph B. The Contractor's indemnity obligations under this Paragraph B shall, but not by way of limitation, specifically include all claims and judgments which may be made against the Owner, the Architect, the Architect's consultants and agents and employees of any of them under any applicable statute, rule or regulation including the New York Statute, Occupational Safety and Hazardous Act, and the Federal Occupational Safety and Hazardous Act. In claims against any person or entity indemnified under this Paragraph B by an employee of the Contractor, a SubContractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph B shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a SubContractor under workers' or workmen's compensation acts, disability benefit acts, or other employee benefit acts.

C. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board, and its agents; and (2) the Architect and its consultants, employees, officers, and agents from and against any fines, penalties, judgments, or damages, including reasonable attorney's fees, imposed on or incurred by the parties indemnified hereunder which are incurred as a result of the Contractor's failure to give the notices required by Article 6(T) of the General Conditions of the Contract for Construction.

D. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board and agents; and (2) the

Architect and its consultants, employees, officers and agents from and against any actions, lawsuits or proceedings or claims of liens brought against each or any of them as a result of liens filed against the Contractor's Project funds, including all the cost and expense of said liens, and including but not limited to attorney's fees incurred by each or any of them.

E. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board and agents; and (2) the Architect and its consultants, employees, officers, and agents from and against any and all liability for violation of all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies applicable to the Contractor's work and shall defend any claims or actions which may be brought against the Owner as the result thereof.

F. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board and agents; and (2) the Architect and its consultants, employees, officers and agents from and against any and all liability for claims made by third parties, including SubContractors, in connection with this Agreement and shall defend any claims or actions which may be brought against the Owner as the result thereof.

G. The Contractor shall defend, indemnify and hold harmless (1) the Owner, its consultants, employees, officers, members of the Board and agents; and (2) the Architect and its consultants, employees, officers and agents from and against any and all claims, damages, losses, suits, obligations, fines, penalties, costs, charges, and expenses which may be imposed upon or incurred by or asserted against any of them by reason of any act or omission of such contractor or any subcontractor or any person or firm directly or indirectly or indirectly employed by such contractor, with respect to violations of OSHA requirements, rules, and/or regulations.

H. The indemnification obligations set forth herein shall become effective upon the Owner's or the Architect's receipt of a claim for which the Contractor is required to provide indemnification to the Owner or the Architect. In the event that the Contractor shall fail to refuse to defend any such action, the Contractor shall be liable to the Owner for all costs of the Owner in defending such claim or action and all costs of the Owner, including attorney's fees, in recovering such defense costs from the Contractor. In the event the Owner or the Architect is required to bring an action to enforce the indemnification obligation, the Contractor shall be liable to the Owner and/or the Architect for all costs associated with said action including attorney's fees.

By: _____
Signature of Authorized Representative of Contractor

(Print Name and Title)

(Date)

INSURANCE COVERAGE CERTIFICATION

_____ (name), President/CEO/Owner/Managing Member of
_____ (bidder), hereby represents that the bidder currently
has, or immediately upon being awarded the contract, will obtain insurance coverage, from an
insurer licensed and admitted to do business in the State of New York, that meets the following
requirements:

1. **Workers' Compensation, Paid Family Leave and NYS Disability Insurance**
Statutory Workers' Compensation (C-105.2 or U-26.3), NYS Paid Leave and NYS
Disability Insurance (DB-120.1) for all employees. Proof of coverage must be on
the approved specific form, as required by the New York State Workers'
Compensation Board. ACORD certificates are not acceptable. A person seeking an
exemption must file a CE-200 Form with the state. The form can be completed and
submitted directly to the WC Board online.
2. **Commercial General Liability Insurance**
\$1,000,000 per Occurrence/\$2,000,000
\$2,000,000 Products and Completed Operations
\$1,000,000 Personal and Advertising Injury
\$100,000 Fire Damage
\$10,000 Medical Expense
The general aggregate shall apply on a per-project basis.
3. **Owners Contractors Protective (OCP) Insurance:**
For Projects less than or equal to \$1,000,000 and work on 1 story (10 feet) only:
\$1,000,000 per occurrence, \$2,000,000 aggregate with the Owner as the named
insured.

For Projects greater than \$1,000,000 and/or work above one story (10 feet):
\$2,000,000 per occurrence, \$4,000,000 aggregate with the Owner as the named
insured.

The Owner will be the named insured on OCP Policies. There will be no additional
insureds on any OCP Policies.
4. **Automobile Liability**
\$1,000,000 combined single limit for owned, hired, borrowed and non-owned
motor vehicles.
5. **Umbrella/Excess Insurance**
\$5,000,000 each occurrence and aggregate for general construction (including
plumbing, electrical and HVAC) and no work at elevation (1 story or 10 feet) or
Project values less than or equal to \$1,000,000.

\$10,000,000 each occurrence and aggregate for high-risk construction, work at elevation (>1 story or 10 feet) or Project values greater than \$1,000,000.

Umbrella/Excess coverage shall be on a follow-form basis or provide broader coverage over the General Liability and Automobile Liability coverages.

6. **Asbestos/Lead Abatement/Pollution Liability Insurance**

If the Project requires the removal of asbestos and/or hazardous materials, Contractor shall provide hazardous material liability insurance as follows:

\$2,000,000 per occurrence/\$2,000,000 aggregate, including products and completed operations. Such insurance shall include coverage for the Contractor's operations including, but not limited to, removal, replacement, enclosure, encapsulation and/or disposal of asbestos, or any other hazardous material, along with any related pollution events, including coverage for third-party liability claims for bodily injury, property damage and clean-up costs. If a retroactive date is used, it shall pre-date the inception of the Contract.

If the Contractor is using motor vehicles for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage (ISO endorsement CA 9948 or CA 01 12), as well as proof of MCS 90. Coverage shall fulfill all requirements of this Article 10 and shall extend for a period of three (3) years following acceptance by the Owner of the Certificate of Completion.

7. **Testing Company Errors and Omission Insurance**

\$1,000,000 per occurrence/\$2,000,000 aggregate for the testing and other professional acts of the Contractor performed under the Contract with the Owner.

Insurance Representative's Acknowledgment:

We have reviewed the insurance requirements set forth in the Bidding Documents and are capable of providing such insurance to our insured in accordance with such requirements in the event the contract is awarded to our insured and provided our insured pays the appropriate premium.

Insurance Representative: _____

Address: _____

Are you an agent for the companies providing the coverage: Yes _____ No _____

Date: _____

Insurance Representative

Bidder's Acknowledgment:

I acknowledge that I have reviewed the insurance requirements for this bid and have considered the costs, if any, of procuring the required insurance and will be able to supply the insurance required in accordance with the bid, if it is awarded. I understand that a certificate of insurance must be submitted with my bid; and if it is not, the Owner may reject my bid and award to the next lowest bidder.

Firm Name: _____

Address: _____

Date: _____

Bidder's Signature

Labor Law 220-i Certification Form

-Sign and Submit with Bid-

By submission of this bid, the person authorized to sign on behalf of the Bidder hereby certifies, under penalty of perjury, that: (i) the Bidder is registered with the New York State Department of Labor pursuant to Section 220-i of the New York Labor Law and (ii) each of the subcontractors engaged by the Bidder for this Project are also registered.

Bidder further represents that it has included with this certification, a copy of the Certificate(s) of Registration issued by the Commissioner of the Department of Labor for the Bidder and each of its subcontractor(s).

Project: _____

Bidder Name (Corporate): _____

Bidder Address: _____

Signature of Corporate Officer: _____

Print Name and Title: _____

Date: _____

Sworn to before me this _____
day of _____, 20____

Notary Public

Sexual Harassment Prevention Certification Form

By submission of this bid, the person signing on behalf of the bidder certifies, under penalty of perjury, that: the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace; the bidder provides annual sexual harassment prevention training to all of its employees; and that the principal(s) and all employees of the bidder have completed the sexual harassment prevention training in the last twelve (12) months. Such policy shall, at a minimum, meet the requirements of Section 201-g of the Labor Law.

Bidder Name: _____

Bidder Address: _____

Print Name and Title: _____

Signature: _____

Date: _____

Sworn to before me this _____
day of _____, 20____

Notary Public

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she is the _____ of the _____ Corporation and that neither the Bidder/ Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED

SWORN to before me this

_____ day of _____

20__

Notary Public: _____

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN
DIVESTMENT ACT**

Bidders shall complete this form if they cannot certify that the bidder /contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.

Name of the Bidder: _____

Address of Bidder: _____

Has bidder been involved in investment activities in Iran? _____
Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate) _____

If so, when did the first investment activity occur? _____

Have the investment activities ended? _____

If so, what was the date of the last investment activity? _____

If not, have the investment activities increased or expanded since April 12, 2012? _____

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran? _____

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. _____

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

I, _____ being duly sworn, deposes and says that he/she is the

_____ of the _____ Corporation and the foregoing is

true and accurate.

SIGNED

SWORN to before me this

_____ day of _____

20__

Notary Public: _____

-FORM OF DISCLOSURE-

THE UNDERSIGNED AFFIRMS THAT THE FOLLOWING CONSTITUTE ALL OFFICERS, DIRECTORS, PARTNERS, OR CONTROLLING PRINCIPALS OF THE FIRM:

Name

Title

1. Does any School District Board Member, administrator, or employee possess any financial interest, directly or indirectly, in the firm?_____ If yes, set forth the basis upon which a financial interest exists in the firm:

2. Has the firm or any of its officers, directors, partners, or controlling principals possessed any interest in transactions heretofore entered into with the School District?_____ If yes, please describe transaction(s):

3. Does any direct relative of a member of the Board, administrators, or staff possess any financial interest, directly or indirectly, in the firm (For purpose of this inquiry a direct relative is to be defined as a parent, spouse, child or sibling)._____If yes, set forth below the School District Board Member, administrator, or staff member whose relation possess an interest and the relationship:

THE UNDERSIGNED AFFIRMS THAT THE ABOVE STATEMENTS ARE TRUE AND UNDERSTANDS THAT ANY FALSE STATEMENT SHALL CONSTITUTE A VIOLATION OF THE PENAL CODE OR GENERAL MUNICIPAL LAW AS APPLICABLE.

Firm: _____

Signature: _____

Print Name: _____

Title: _____

Date: _____

AGREEMENT made as of the ____ day of _____ in the year of Two Thousand Twenty _____.

BETWEEN the Owner
(Name and address)

and the Contractor:
(Name and address)

The Project is:
(Name and location)

The Architect is:
(Name and address)

The Owner and Contractor agree as set forth below.

ARTICLE 1
THE CONTRACT DOCUMENTS

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

ARTICLE 2
THE WORK OF THIS CONTRACT

The Contractor shall execute the entire Work described in the Contract Documents or reasonably inferable by the Contractor as necessary to produce the results intended by the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3
DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3.1 The date of commencement of the work and substantial completion of the work of this contract shall be in accordance with the schedule set forth in the Project Manual.

3.2 Time is of the essence respecting the contract documents and all obligations thereunder.

3.3 Upon the execution of this Agreement, the Contractor shall provide the Owner with copies of all contracts entered into between the Contractor and subcontractors or material suppliers. The Contractor's obligation to provide the Owner with said contracts shall continue for the duration of the Project.

ARTICLE 4
CONTRACT SUM

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

4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Bid Proposal Form (attached hereto) and are hereby accepted by the Owner:

4.3 Unit prices are as set forth in Exhibit A hereto.

ARTICLE 5
PROGRESS PAYMENTS

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

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

All progress payments shall be based upon an estimate and a certificate, made by the Architect, of the materials furnished, installed, and suitably stored at the site and the work done by the Contractor, and payment shall be made in installments of ninety-five percent (95%) of the amount certified as earned so that, at the completion of the work, there will be a retainage of five percent (5%) of the Total Contract Sum. Retainage shall be paid to the Contractor upon final completion of the work of this contract. All progress payments made previous to the last and final payment shall be based on estimates and the right is hereby reserved by the Architect for the Owner to make all due and proper corrections in any payment for any previous error.

The Contractor shall submit with each application for payment the following:

5.2.1 A current Sworn Statement from the Contractor setting forth all subcontractors and materialmen with whom the Contractor has subcontracted, the amount of such subcontract, the amount requested for any subcontractor or materialman in the application for payment and the amount to be paid to the Contractor from such progress payment.

5.2.2 Commencing with the second (2nd) Application for Payment submitted by the Contractor, duly executed so-called "after the fact" waivers of mechanics' and materialmen's liens from all subcontractors, materialmen and, when appropriate, from lower tier subcontractors, establishing receipt of payment or satisfaction of payment of all amounts requested on behalf of such entities and disbursed prior to submittal by the Contractor of the current Application for Payment, plus sworn statements from all subcontractors, materialmen and, where appropriate, from lower tier subcontractors, covering all amounts described in this Paragraph 5.2.

5.2.3 Such other information, documentation and materials as the Owner or the Architect may require.

5.3 Payment shall not be released to the Contractor until the Owner receives the following documentation:

5.3.1 Certified payroll for employees and employees of subcontractors performing work on the Project.

5.3.2 Copies of invoices submitted to the Contractor by its subcontractors and/or material suppliers.

ARTICLE 6 **FINAL PAYMENT**

Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when (1) the Contract has been fully performed including compliance with all provisions of the Contract Documents except for the Contractor's responsibility to correct nonconforming Work under Article 15(B) of the General Conditions and to satisfy other requirements, if any, which necessarily survive final payment; and (2) a final Certificate for Payment has been issued by the Architect; such final payment shall be made by the Owner not more than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows or as soon thereafter as is practicable.

ARTICLE 7 **MISCELLANEOUS PROVISIONS**

7.1 Where reference is made in this Agreement to a provision of the General Conditions or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

7.2 The Contractor represents and warrants the following to the Owner (in addition to any other representations and warranties contained in the Contract Documents) as an inducement to the Owner to execute this Agreement, which representations and warranties shall survive the execution and delivery of this Agreement, any termination of this Agreement and the final completion of the Work:

7.2.1 that it and its Subcontractors are financially solvent, able to pay all debts as they mature and possessed of sufficient working capital to complete the Work and perform all obligations hereunder;

7.2.2 that it is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform its obligations hereunder;

7.2.3 that it is authorized to do business in the State of New York and the United States and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the Project;

7.2.4 that its execution of this Agreement and its performance thereof is within its duly authorized powers;

7.2.5 that its duly authorized representative has visited the site of the Project, is familiar with the local and special conditions under which the Work is to be performed and has correlated on-site observations with the requirements of the Contract Documents; and

7.2.6 that it possesses a high level of experience and expertise in the business administration, construction, construction management and superintendence of projects of the size, complexity, and nature of the particular Project, and that it will perform the Work with the care, skill, and diligence of such a contractor.

The foregoing warranties are in addition to, and not in lieu of, any and all other liability imposed upon the Contractor by law with respect to the Contractor's duties, obligations, and performance hereunder. The Contractor's liability hereunder shall survive the Owner's final acceptance of and payment for the Work. All representations and warranties set forth in this Agreement, including without limitation, this Paragraph 7.2, shall survive the final completion of the Work or the earlier termination of this Agreement. The Contractor acknowledges that the Owner is relying upon the Contractor's skill and experience in connection with the Work called for hereunder.

ARTICLE 8

TERMINATION OR SUSPENSION

8.1 The Contract may be terminated by the Owner as provided in the General Conditions.

8.2 The Work may be suspended by the Owner as provided in the General Conditions.

ARTICLE 9

ENUMERATION OF CONTRACT DOCUMENTS

9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated as follows:

9.1.1 The Agreement is this executed Agreement between Owner and Contractor.

9.1.2 The General Conditions are the General Conditions of the Contract for Construction as set forth in the Project Manual and attached hereto.

9.1.3 The Specifications are as set forth in the Project Manual and indexed in Exhibit "B" hereto.

9.1.4 The Drawings are those as indexed in Exhibit "C" hereto.

9.1.5 The Addenda, if any, are as follows:

Addendum No.	Date	Number of Pages

This Agreement is entered into as of the day and year first written above and is executed in at least three original copies of which one is to be delivered to the Contractor, one to the Architect for use in the administration of the Contract, and the remainder to the Owner.

OWNER

CONTRACTOR

By: _____

(printed name and title)

By: _____

(printed name and title)

QUALIFICATIONS OF BIDDERS

Experience and Qualifications of the Bidder: Each bidder is required to submit the following documentation to demonstrate its experience and qualifications for the work of the Project for which a bid is submitted:

- a. A description of its experience with projects of comparative size, complexity, and cost, together with documentary evidence showing that said projects were completed to the Owner's satisfaction and were completed in a timely fashion;
- b. Documentation from each of the projects it has performed capital work in the last five (5) years concerning the bidder's:
 - i. timeliness of performance of the work of the project
 - ii. evidence that the project was completed to the Owner's satisfaction;
 - iii. whether or not any extensions of time were requested by the contractor and whether or not such requests were granted;
 - iv. whether litigation and/or arbitration was commenced by either the Owner or the bidder as a result of the work of the project performed by the bidder;
 - v. whether any liens were filed on the project by subcontractors or material suppliers of the bidder;
 - vi. whether the bidder was defaulted on the project by the owner;
 - vii. whether the bidder made any claims for extra work on the project, including whether said claim resulted in a change order;
- c. Documentation evidencing the bidder's financial responsibility, including a certified financial statement prepared by a certified public accountant.
- d. Documentation evidencing the bidder's existence under the same name for the last five (5) years.
- e. Documentation evidencing the bidder's Worker's Compensation Experience Modification.

STATEMENT OF BIDDER'S QUALIFICATIONS

IMPORTANT: BIDDERS ARE REQUIRED TO FURNISH A COMPLETE ANSWER TO ALL OF THE QUESTIONS IN THIS STATEMENT. IF ADDITIONAL SPACE IS REQUIRED TO FURNISH A COMPLETE ANSWER, BIDDER MAY ATTACH PAGES AS NECESSARY. IN THE EVENT THAT COMPLETE ANSWERS ARE NOT PROVIDED TO EVERY QUESTION, THE BID WILL BE REJECTED.

1. Name of Bidder

2. Type of Business Entity

3. If the bidder is a corporation, state the date and place of incorporation of the corporation.

4. For how many years has the bidder done business under its present name?

5. List the persons who are directors, officers, owners, managerial employees, or partners in the bidder's business.

6. Have any of the persons listed in Number 5 owned/operated/been shareholders in any other companies? If so, please state the names of the other companies and the individuals who owned, operated, or have been shareholders:

7. Has any director, officer, owner, or managerial employee had any professional license suspended or revoked? If the answer to this question is yes, list the name of the individual, the professional license he/she formerly held, whether said license was revoked or suspended and the date of the revocation or suspension.

8. Has the bidder been found guilty of any OSHA Violations? If the answer to this question is yes, describe the nature of the OSHA violation, an explanation of remediation or other steps taken regarding such violation(s).

9. Has the bidder been charged with any claims pertaining to unlawful intimidation or discrimination against any employee by reason of age, race, creed, color, national origin, citizenship or immigration status, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, or status as a victim of domestic violence, and/or violations of an employee's civil rights or equal employment opportunities? If the answer to this question is yes, list the persons making such claim against the bidder, a description of the claim, the status of the claim, and what disposition (if any) has been made regarding such claim.

10. Has the bidder been named as a party in any lawsuit arising from performance of work related to any project in which it has been engaged? If the answer to this question is yes, list all such lawsuits, the index number associated with said suit and the status of the lawsuit at the time of the submission of this bid.

11. Has the bidder been the subject of an investigation and/or proceedings before the Department of Labor for alleged violations of the Labor Law as it relates to the payment of prevailing wages and/or supplemental payment requirements? If the answer to this question is yes, please list each such instance of the commencement of a Department of Labor proceeding, for which project such proceeding was commenced, and the status of the proceeding at the time of the submission of this bid.

12. Has the bidder been the subject of an investigation and/or proceeding before any law enforcement agency, including, but not limited to any District Attorney's Office? If the answer to this question is yes, please list each such instance, the law enforcement agency, the nature of the proceeding, the project for which such proceeding was commenced, if applicable to a project, and the status of the proceeding at the time of the submission of this bid.

13. Has the bidder been the subject of proceedings involving allegations that it violated the Workers' Compensation Law, including but not limited to, the failure to provide proof of worker's compensation or disability coverage and/or any lapses thereof? If the answer to this question is yes, list each such instance of violation and the status of the claimed violation at the time of the submissions of this bid.

14. Has the bidder, its officers, directors, owner and/or managerial employees been convicted of a crime or been the subject of a criminal indictment? If the answer to this question is yes, list the name of the individual convicted or indicted, the charge against the individual and the date of disposition of the charge.

15. Has the bidder been charged with and/or found guilty of any violations of federal, state, or municipal environmental and/or health laws, codes, rules and/or regulations? If the answer to this question is yes, list the nature of the charge against the bidder, the date of the charge, and the status of the charge at the time of the submission of this bid.

16. Has the bidder bid on any projects in the last five years preceding the date of this bid submission? If the answer to this question is yes, list the projects bid on, whether said bid was awarded to the bidder and the expected date of commencement of the work for said project. For those projects listed, if the bidder was not awarded the contract, state whether the bidder was the lowest monetary bidder.

IMPORTANT: BIDDERS ARE REQUIRED TO FURNISH A COMPLETE LIST OF PROJECTS AS REQUIRED BY THIS QUESTION #16 WITH ITS BID. IN THE EVENT THE LIST REQUESTED IS NOT SUBMITTED WITH THE BIDDER'S BID, THE BID WILL BE REJECTED.

17. Does the bidder have any projects ongoing at the time of the submission of this bid? If the answer to this question is yes, list the projects on which the bidder is currently working, and the expected date of completion of said project.

IMPORTANT: BIDDERS ARE REQUIRED TO FURNISH A COMPLETE LIST OF PROJECTS AS REQUIRED BY THIS QUESTION #17 WITH ITS BID. IN THE EVENT THE LIST REQUESTED IS NOT SUBMITTED WITH THE BIDDER'S BID, THE BID WILL BE REJECTED.

18. Have the bidder and its bond surety ever been notified by a project Owner that the Owner is contemplating declaring a default and requested a conference to discuss the performance of the contract? If the answer to this question is yes, list the projects on which such a conference was held, and the result of the conference, and the status of the project in question.

19. Has the bidder ever been terminated from a Project by the Owner? If the answer to this question is yes, list the projects on which the bidder was terminated, the nature of the termination (convenience, suspension, for cause), and the date of said termination.

IMPORTANT: BIDDERS ARE REQUIRED TO FURNISH A COMPLETE LIST OF PROJECTS AS REQUIRED BY THIS QUESTION #19 WITH ITS BID. IN THE EVENT THE LIST REQUESTED IS NOT SUBMITTED WITH THE BIDDER'S BID, THE BID WILL BE REJECTED.

20. Has the bidder's surety ever been contacted to provide supervisory services in connection with an on-going project. If the answer to this question is yes, list the project(s) for which the surety provided supervisory services.

IMPORTANT: BIDDERS ARE REQUIRED TO FURNISH A COMPLETE LIST OF PROJECTS AS REQUIRED BY THIS QUESTION #20 WITH ITS BID. IN THE EVENT THE LIST REQUESTED IS NOT SUBMITTED WITH THE BIDDER'S BID, THE BID WILL BE REJECTED.

21. Bidder's Worker's Compensation Experience Modifier: _____

Dated: _____

By: _____
(Signature)

(Print Name and Title)

Sworn to before me this _____
day of _____, 20____.

Notary Public

SECTION 00495 - CERTIFICATION OF INSPECTION FOR INSTALLATION

CERTIFICATION OF INSPECTION FOR INSTALLATION

- A. This form is a part of the bidding requirements and must be submitted, fully executed with the sealed bid.
- B. This form will be included in the Owner/Contractor Agreement of the successful bidder.
- C. Bidder's Name _____
Address _____

Certifies that:

The undersigned has reviewed the enclosed project manual and has visited the site and verified field conditions and dimensions as required to render a complete and accurate bid.

(Bidder)

By: _____
(Title)

ATTEST:

(Seal)

END OF SECTION



AIA[®] Document A310[™] – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

BOND AMOUNT: \$**PROJECT:**

(Name, location or address, and Project number, if any)

Uninterruptible Power Supply (UPS)

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Signed and sealed this day of ,

(Witness)

(Witness)

(Contractor as Principal)

(Seal)

(Title)

(Surety)

(Seal)

(Title)

Init.

/

Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is \$250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training "prior to the performing any work on the project."

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.*)
- Training roster, attendance record or other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is \$3 million in Bronx, Kings, New York, Queens and, Richmond counties; \$1.5 million in Nassau, Suffolk and Westchester counties; and \$500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury.

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.ny.gov) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12226

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Nassau County General Construction

Asbestos Worker

03/01/2025

JOB DESCRIPTION Asbestos Worker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour: 07/01/2024

Asbestos Worker \$ 47.25
Removal & Abatement Only*

NOTE: *On Mechanical Systems that are NOT to be SCRAPPED.

SUPPLEMENTAL BENEFITS

Per Hour:

Asbestos Worker \$ 13.65
Removal & Abatement Only

OVERTIME PAY

See (B, B2, *E, J) on OVERTIME PAGE

*Hours worked on Saturdays are paid at time and one half only if forty hours have been worked during the week.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8) on HOLIDAY PAGE

REGISTERED APPRENTICES

Apprentice Removal & Abatement Only:

1000 hour terms at the following percentage of Journeyman's rates.

1st	2nd	3rd	4th
78%	80%	83%	89%

SUPPLEMENTAL BENEFIT

Per Hour:

Apprentice
Removal & Abatement \$ 13.65

4-12a - Removal Only

Boilermaker

03/01/2025

JOB DESCRIPTION Boilermaker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour: 07/01/2024 01/01/2025

Boilermaker \$ 67.38 \$ 68.88

Repairs & Renovations 67.38 68.88

Repairs & Renovation: Includes Repairing, Renovating replacement of parts to an existing unit(s).

SUPPLEMENTAL BENEFITS

Per Hour:

Boilermaker	33.5% of hourly	33.5% of Hourly
Repair & Renovations	Wage Paid	Wage Paid
	+ \$ 26.85	+ \$26.85

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.

Repairs & Renovation Includes replacement of parts and repairs & renovation of existing unit.

OVERTIME PAY

See (*B, O, **U) on OVERTIME PAGE

Note: * Includes 9th & 10th hours, double for 11th or more.

** Labor Day ONLY, if worked.

Repairs & Renovation see (B,E,Q) on OT Page

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 12, 15, 25, 26, 29) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage per hour:

(1/2) Year Terms at the following percentage of Boilermaker's Wage

1st	2nd	3rd	4th	5th	6th	7th
65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits Per Hour:

	33.5% of Hourly Wage Paid Plus Amount Below	33.5% of Hourly Wage Paid Plus Amount Below
1st Term	\$ 20.36	\$ 20.36
2nd Term	21.28	21.28
3rd Term	22.22	22.22
4th Term	23.12	23.12
5th Term	24.07	24.07
6th Term	25.00	25.00
7th Term	25.93	25.93

NOTE: "Hourly Wage Paid" shall include any and all premium(s)

4-5

Broadband	03/01/2025

JOB DESCRIPTION Broadband

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour:	07/01/2024	06/29/2025
Field Tech	\$ 52.40	\$ 53.97
Install/Repair		

For outside work (excluding installation on building construction/alteration/renovation projects), stopping at first point of attachment (demarcation), installing/maintaining/repairing broadband internet service.

SUPPLEMENTAL BENEFITS

Per Hour: \$ 23.24

OVERTIME PAY

See (B, K, *R) on OVERTIME PAGE

Note: *Two and one half times the hourly rate after the 8th hour

HOLIDAY

Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

4-CWA-Dist1

Carpenter	03/01/2025

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour:	07/01/2024
Piledriver	\$ 60.59 + 10.00*
Dockbuilder	\$ 60.59 + 10.00*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker \$ 45.79

OVERTIME PAY

See (B, E2, O) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.

Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour

(1)year terms:

1st	2nd	3rd	4th
\$26.98	\$32.58	\$40.96	\$49.35
+ 5.50*	+ 5.50*	+ 5.50*	+ 5.50*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

All Terms: \$ 32.34

8-1556 Db

Carpenter

03/01/2025

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2024

Carpet/Resilient

Floor Coverer \$ 55.05
+ 8.25*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

INCLUDES HANDLING & INSTALLATION OF ARTIFICIAL TURF AND SIMILAR TURF INDOORS/OUTDOORS.

SUPPLEMENTAL BENEFITS

Per hour:

\$ 39.45

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE.

Paid for 1st & 2nd yr.

Apprentices See (5,6,11,13,16,18,19,25)

Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wage per hour - (1) year terms:

1st	2nd	3rd	4th
\$ 25.20	\$ 28.20	\$ 32.45	\$ 40.33
+ 1.85*	+ 2.35*	+ 2.85*	+ 3.85*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$ 15.22	\$ 16.22	\$ 19.32	\$ 20.32

8-2287

Carpenter**03/01/2025**

JOB DESCRIPTION Carpenter**DISTRICT** 8**ENTIRE COUNTIES**

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per Hour: 07/01/2024

Marine Construction:

Marine Diver	\$ 75.46
	+ 10.00*

Marine Tender	\$ 55.00
	+ 10.00*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker	\$ 45.65

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 13, 16, 18, 19, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour:

One (1) year terms.

1st year	\$ 26.98
	+ 5.50*
2nd year	32.58
	+ 5.50*
3rd year	40.96
	+ 5.50*
4th year	49.35
	+ 5.50*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits

Per Hour:

All terms	\$ 32.20

8-1456MC

Carpenter**03/01/2025**

JOB DESCRIPTION Carpenter**DISTRICT** 8**ENTIRE COUNTIES**

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2024

Building	
Millwright	\$ 59.35
	+ 13.12*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour:

Millwright \$ 45.41

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE

Paid: See (18,19) on HOLIDAY PAGE.

Overtime See (5,6,8,11,13,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour:

One (1) year terms:

1st.	2nd.	3rd.	4th.
\$ 32.16	\$ 37.61	\$ 43.06	\$ 53.96
+ 7.08*	+ 8.25*	+ 9.42*	+ 11.76*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

One (1) year terms:

1st.	2nd.	3rd.	4th.
\$ 30.56	\$ 33.09	\$ 36.27	\$ 40.69

8-740.1

Carpenter

03/01/2025

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:

07/01/2024

Timberman \$ 55.59
+ 10.26*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per Hour:

07/01/2024

\$ 44.96

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Overtime: See (5, 6, 11, 13, 25) on HOLIDAY PAGE

Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.

Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour:

One (1) year terms:

1st	2nd	3rd	4th
\$24.96	\$30.07	\$37.72	\$45.38
+ 5.55*	+ 5.55*	+ 5.55*	+ 5.55*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

All terms \$ 31.95

Carpenter

03/01/2025

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Westchester

PARTIAL COUNTIES

Orange: South of but including the following, Waterloo Mills, Slate Hill, New Hampton, Goshen, Blooming Grove, Mountainville, east to the Hudson River.

Putnam: South of but including the following, Cold Spring, Tompkins Corner, Mahopac, Croton Falls, east to Connecticut border.

Suffolk: West of Port Jefferson and Patchogue Road to Route 112 to the Atlantic Ocean.

WAGES

Per hour: 07/01/2024

Core Drilling:

Driller \$ 46.25
+ 3.25*

Driller Helper \$ 36.28
+ 3.25*

Note: Hazardous Waste Pay Differential:

For Level C, an additional 15% above wage rate per hour

For Level B, an additional 15% above wage rate per hour

For Level A, an additional 15% above wage rate per hour

Note: When required to work on water: an additional \$ 3.00 per hour.

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour:

Driller and Helper \$ 30.24

OVERTIME PAY

See (B, G, P) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

8-1536-CoreDriller

Carpenter

03/01/2025

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, New York, Putnam, Queens, Richmond

PARTIAL COUNTIES

Nassau: The portion of the county that lies west of Seaford Creek and south of the Southern State Parkway.

WAGES

Per hour: 07/01/2024

Show Exhibit \$ 55.75
+ 9.80**

Bldg. Carpenter* \$57.05
+ 8.39**

* Not applicable in Putnam County

**This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour worked:

Show Exhibit \$ 45.20
Bldg. Carpenter 39.75

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE

Paid: for 1st & 2nd yr.

Apprentices See (5,6,11,13,16,18,19,25)

Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour: Show Exhibit

(1) year terms:

1st.	2nd.	3rd.	4th.
\$22.30	\$27.88	\$36.24	\$44.60
+ 4.90*	+ 4.90*	+ 4.90*	+ 4.90*

*This portion is not subject to overtime premiums

Supplemental benefits per hour:

All terms \$ 30.25

Wages per hour: Bldg. Carpenter

(1) year terms:

1st	2nd	3rd	4th
\$ 22.20	\$ 25.20	\$ 29.45	\$ 37.33
+ 2.14*	+ 2.59*	+ 3.09*	+ 4.09*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$ 15.37	\$ 16.42	\$ 19.52	\$ 20.52

8-EXHIB

Carpenter - Building / Heavy&Highway

03/01/2025

JOB DESCRIPTION Carpenter - Building / Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Suffolk

PARTIAL COUNTIES

Nassau: Entire County EXCEPT for the portion of Nassau County that lies both west of Seaford Creek AND south of the Southern State Parkway.

WAGES

Per Hour: 07/01/2024

Carpenter

(Building) \$ 52.07

Carpenter

(Heavy Highway) 52.07

SHIFT WORK

ADD 15% to straight time hourly wage for NEW YORK STATE D.O.T. and other GOVERNMENTAL MANDATED Off-Shift Work.

SUPPLEMENTAL BENEFITS

Per Hour:

Both Carpenter

Categories \$ 33.92

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

One(1) Year Terms at the following

Per Hour:

1st Term \$ 25.56

2nd Term 30.00

3rd Term 34.44

4th Term 38.88

Supplemental Benefits
Per Hour:

All Terms: \$ 20.71

4-Reg.Council Nass/Suff

Carpenter - Heavy&Highway**03/01/2025**

JOB DESCRIPTION Carpenter - Heavy&Highway

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, New York, Queens, Richmond

PARTIAL COUNTIES

Nassau: That portion of the county that lies West of Seaford Creek and South of the Southern State Parkway.

WAGES

Per hour:

07/01/2024

Heavy & Highway

Carpenter \$ 60.59
+ 10.00*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour worked:

Heavy & Highway

Carpenter \$ 45.70

OVERTIME PAY

See (B, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 13, 25) on HOLIDAY PAGE

Paid : for 1st & 2nd yr

Apprentices See (5, 6, 11, 13, 25)

REGISTERED APPRENTICES

Wage per hour:

One (1) year terms:

	1st	2nd	3rd	4th
Heavy & Highway	\$ 26.98	\$ 32.58	\$ 40.96	\$ 49.35
	+ 5.50*	+ 5.50*	+ 5.50*	+ 5.50*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits:

Per Hour:

All terms
\$ 32.25

8-NYC H/H

Electrician**03/01/2025**

JOB DESCRIPTION Electrician

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:

07/01/2024

04/26/2025

Electrician:

Electrical Maintenance \$ 48.29 \$ 49.79

Traffic Signal \$ 49.25 \$ 50.75

"PLEASE NOTE"

Applicable to "EXISTING ELECTRICAL SYSTEMS" including, but not limited to TRAFFIC SIGNALS & STREET LIGHTING. Not used for

addons.

SUPPLEMENTAL BENEFITS

Per Hour:

Electrical Maintenance:	14% of Hourly Wage Paid + \$23.78	14% of Hourly Wage Paid + \$25.27
Traffic Signal:	14% of Hourly Wage Paid + \$24.16	14% of Hourly Wage Paid + \$25.42

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay

OVERTIME PAY

See (B, E2, K, P) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Term(s) at the following Percentage of Journeyman(s) Wage:

1st 6mo	40%	
2nd 6mo	50%	
2nd year	60%	
3rd year	70%	
4th year	80%	
5th year	90%	
Supplemental Benefits:	07/01/2024	04/26/2025
1st 6mo	5% + \$5.32	5% + \$5.63
2nd 6mo	10% + \$6.20	10% + \$6.57
2nd year	11% + \$7.61	11% + \$7.77
3rd year	12% + \$9.96	12% + \$10.53
4th year	13% + \$13.93	13% + \$14.70
5th year	14% + \$17.63	14% + \$18.58

NOTE: Percentages are on "Hourly Wage Paid"

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay

4-25m

Electrician

03/01/2025

JOB DESCRIPTION Electrician

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:	07/01/2024	12/29/2024
Tree Trimmer/Remover		
Line Clearance Specialist	\$ 42.80	\$ 44.51
Groundman*	25.67	26.70

These rates apply to all tree trimming/removal contracts including but not limited to "Electrical Line Clearance"/"Long Island Railroad Right of Ways".

For Building Construction or Road/Highway Construction Contracts, Heavy & Highway Laborer and Operating Engineer classifications Apply.

* Note: Groundman Classification not to exceed 20% of the company(s) workforce on Project. Please contact local office for clarification.

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2024	12/29/2024
Tree Trimmer		
Line Clearance Specialist and Groundman	\$21.03	\$22.90

OVERTIME PAY

See (B, E, P, S) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 16, 23, 24, 25, 26) on HOLIDAY PAGE

4-1049/Tree

Electrician

03/01/2025

JOB DESCRIPTION Electrician

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour: 07/01/2024

Electrician/Wireman \$ 61.75

Inside/Outside

SUPPLEMENTAL BENEFITS

Per Hour

Electrician/Wireman 18% of Hourly
(all categories) Wage Paid
+ \$ 34.43

NOTE: "Hourly Wage Paid" shall include any and all premium[s]

OVERTIME PAY

See (B, E, E2, Q, V) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Terms at the following Percentage of Journeyman(s) Wage:

Indentured BEFORE 4/25/2020:

1st 6mnth	35%
2nd 6mnth	35%
2nd year	40%
3rd year	45%
4th year	60%
5th year	75%

Indentured AFTER 4/25/2020 (6 month terms):

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
35%	35%	37.5%	40%	42.5%	45%	50%	55%	65%	75%

Supplemental Benefits Per Hour:

07/01/2024

Indentured BEFORE 04/25/2020:

1st 6 Months	5% + \$5.64
2nd 6 Months	10% + \$6.97
3rd Year	11% + \$8.21
4rd Year	12% + \$9.64
5th Year	15% + \$12.09
6th Year	16% + \$19.11

Indentured AFTER 04/25/2020 (6 month terms):

1st	5% + \$ 5.64
2nd	10% + \$ 6.97
3rd	11% + \$ 8.24
4th	12% + \$ 9.57
5th	12% + \$ 9.64
6th	12% + \$ 9.68
7th	15% + \$ 12.13
8th	15% + \$ 12.15
9th	16% + \$ 19.11
10th	16% + \$ 19.17

NOTE: Percentages are on "Hourly Wage Paid"

NOTE: "Hourly Wage Paid" shall include any and all premium(s).

4-25

Electrician	03/01/2025

JOB DESCRIPTION Electrician

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:	07/01/2024	4/26/2025
Electrician		
Pump & Tank	\$ 47.15	\$ 48.65

SUPPLEMENTAL BENEFITS

Per Hour:		
Electrician		
Pump & Tank	18% of Hourly Wage paid + \$26.00	18% of Hourly Wage paid + 27.24

*Wage Paid includes any and all Premiums

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

1 Year Terms at the Following:

Per Hour:

1st	2nd	3rd	4th
\$18.53	\$19.53	\$20.53	\$21.53

SUPPLEMENTAL BENEFITS

Per Hour:

1st	5% of *Hourly Wage paid + \$7.03
2nd	8% of *Hourly Wage paid + \$7.93
3rd	8% of *Hourly Wage paid + \$8.40
4th	8% of *Hourly Wage paid + \$9.90

*Wage Paid includes any and all Premiums

4-25 Pump & Tank

Electrician	03/01/2025

JOB DESCRIPTION Electrician

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:	07/01/2024	04/26/2025
Telephone and Integrated Tele-Data System Electrician	\$ 41.68	\$ 42.93

This rate classification applies to ALL Voice, Data & Video work.: Excluding Fire Alarm Systems and Energy Management Systems (HVAC Controls), in those cases the regular Electrician rate applies. To ensure proper use of this rate please call Nassau Offices at (516)228-3912 or Suffolk Offices at (631)687-4882.

SUPPLEMENTAL BENEFITS

Per Hour:

Tele-Data Electrician	18% of Hourly Wage Paid + \$ 23.61	18% of Hourly Wage Paid + \$ 24.82

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25, 26) on HOLIDAY PAGE

4-25tela

Electrician Lineman

03/01/2025

JOB DESCRIPTION Electrician Lineman

DISTRICT 4

ENTIRE COUNTIES

Nassau, Queens, Suffolk

WAGES

For Utility Distribution & Transmission Line Construction:

Per Hour: 07/01/2024

Lineman/Splicer	\$65.25
Material Man	56.77
Heavy Equip. Operator	52.20
Groundman	39.15
Flagman	29.36

For Natural Gasline Construction

Per Hour:
Journeyman U.G.Mech \$ 57.63

SUPPLEMENTAL BENEFITS

Per Hour:
Utility Distribution & Transmission Line Construction:

All Classifications	07/01/2024
	32.75% of Hourly Wage Paid + \$15.04

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay

Natural Gasline Construction
Per Hour: 07/01/2024

Journeyman U.G.Mech. 33.24

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE
OVERTIME for Natural Gas Mechanic:(B,G,P)

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 16, 23, 25, 26) on HOLIDAY PAGE
Same as Above for Natural Gas Mechanic.

REGISTERED APPRENTICES

1000 hour Terms at the following Percentage of Journeyman's Wage.
(Lineman Only)

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFIT:

07/01/2024

All Terms	31.75% of Hourly Wage Paid + \$ 15.04

4-1049 Line/Gas

Elevator Constructor	03/01/2025

JOB DESCRIPTION Elevator Constructor

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

PARTIAL COUNTIES

Rockland: Entire County except for the Township of Stony Point

Westchester: Entire County except for the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES

Per hour:

	07/01/2024	03/17/2025
Elevator Constructor	\$ 80.35	\$ 83.37
Modernization & Service/Repair	63.16	65.54

SUPPLEMENTAL BENEFITS

Per Hour:

Elevator Constructor	\$ 46.367	\$ 47.654
Modernization & Service/Repairs	45.217	46.470

OVERTIME PAY

Constructor See (D, M, T) on OVERTIME PAGE.

Modern/Service See (B, F, S) on OVERTIME PAGE.

HOLIDAY

Paid: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES PER HOUR:

6 MONTH TERMS:

1st Term*	2nd & 3rd Term*	4th & 5th Term	6th & 7th Term	8th & 9th Term
50%	50%	55%	65%	75%

* Note: 1st, 2nd, 3rd Terms are based on Average of the Constructor, the Modernization and the Service/Repair wage.
Terms 4 thru 9 Based on Journeyman's wage of classification Working in.

SUPPLEMENTAL BENEFITS:

	07/01/2024	03/17/2025
Elevator Constructor		
1st Term	\$ 0.00	\$ 0.00
2nd & 3rd Term	36.15	36.90
4th & 5th Term	37.19	37.99
6th & 7th Term	38.80	39.70
8th & 9th Term	40.41	41.40
Modernization & Service/Repair		
1st Term	\$ 0.00	\$ 0.00
2nd & 3rd Term	36.15	36.90
4th & 5th Term	37.19	37.99
6th & 7th Term	38.80	39.70
8th & 9th Term	40.41	41.40

4-1

Glazier	03/01/2025

JOB DESCRIPTION Glazier

DISTRICT 8

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per hour:	07/01/2024	05/01/2025 Additional \$ 1.11***
Glazier, Glass Tinting and Window Film	\$ 63.28	
Scaffolding, including swing scaffold	67.28	
*Mechanical Equipment	64.28	
**Repair & Maintenance	30.76	

*Mechanical equipment, scissor jacks, man lifts, booms & buckets 30' or more, but not pipe scaffolding.

**Repair & Maintenance- All repair & maintenance work on a particular building whenever performed, where the total cumulative Repair & Maintenance contract value is under \$193,000.

***To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per hour:	7/01/2024
Glazier, Glass Tinting Window Film, Scaffolding and Mechanical Equipment	\$ 42.13
Repair & Maintenance	24.62

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

For 'Repair & Maintenance' see (B, B2, I, S) on overtime page.

HOLIDAY

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

For 'Repair & Maintenance'

Paid: See(5, 6, 16, 25)

Overtime: See(5, 6, 16, 25)

REGISTERED APPRENTICES

Wage per hour:

(1) year terms at the following wage rates:

	7/01/2024
1st term	\$ 22.34
2nd term	30.64
3rd term	40.87
4th term	50.14

Supplemental Benefits:

(Per hour)

1st term	\$ 19.27
2nd term	27.34
3rd term	32.85
4th term	36.01

8-1087 (DC9 NYC)

Insulator - Heat & Frost

03/01/2025

JOB DESCRIPTION Insulator - Heat & Frost

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour: 07/01/2024

Insulators Heat & Frost	\$ 71.01

SUPPLEMENTAL BENEFITS

Per Hour:

Insulators \$ 36.76

Heat & Frost

OVERTIME PAY

See (B, E, *Q, V) on OVERTIME PAGE

* Triple time for Labor Day (If worked)

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages:

1 year terms.

Wages Per Hour:

1st	2nd	3rd	4th
\$ 31.96	\$ 39.06	\$ 46.16	\$ 53.26

Supplemental Benefits:

\$ 16.56	\$ 20.23	\$ 23.91	\$ 27.06

4-12

Ironworker

03/01/2025

JOB DESCRIPTION Ironworker

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:	07/01/2024	01/01/2025 Additional
Stone Derrickmen Rigger	\$ 75.40	\$ 1.64*
Stone Handset Derrickman	72.55	1.11*

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per hour:

Stone Derrickmen Rigger	\$ 45.52
Stone Handset Derrickman	44.76

OVERTIME PAY

See (B, D1, *E, Q, **V) on OVERTIME PAGE

*Time and one-half shall be paid for all work on Saturday up to eight (8) hours and double time shall be paid for all work thereafter.

** Benefits same premium as wages on Holidays only

HOLIDAY

Paid: See (18) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 25) on HOLIDAY PAGE

Work stops at schedule lunch break with full day's pay.

REGISTERED APPRENTICES

Wage per hour:

Stone Derrickmen Rigger:

	1st	2nd	3rd	4th
07/01/2024	\$ 37.20	\$ 53.28	\$ 59.32	\$ 65.36

Supplemental Benefits:

Per hour:

07/01/2024	23.27	34.39	34.39	34.39

Stone Handset:

1/2 year terms at the following hourly wage rate:

1st	2nd	3rd	4th

07/01/2024	\$ 35.78	\$ 51.04	\$ 56.79	\$ 62.55

Supplemental Benefits:

Per hour:

07/01/2024	22.95	34.08	34.08	34.08

9-197D/R

Ironworker

03/01/2025

JOB DESCRIPTION Ironworker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:	07/01/2024	01/01/2025

Ornamental	\$ 47.65	\$ 47.90
Chain Link Fence	47.65	47.90
Guide Rail	47.65	47.90

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:	\$ 66.29	\$ 67.29

OVERTIME PAY

See (B, B1, Q, V) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

1 year terms

1st Term	\$ 25.98	\$ 26.45
2nd Term	28.45	28.97
3rd Term	30.80	31.36
4th Term	34.39	35.02

Supplemental Benefits per hour:

1st Term	\$ 16.29	\$ 16.29
2nd Term	18.29	18.29
3rd Term	19.29	19.29
4th Term	20.29	20.29

4-580-Or

Ironworker

03/01/2025

JOB DESCRIPTION Ironworker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

PER HOUR:

07/01/2024	01/01/2025

Ironworker:		
Structural	\$ 57.20	\$ 58.45
Bridges		
Machinery		

SUPPLEMENTAL BENEFITS

PER HOUR PAID:

Journeyman	\$ 89.85	\$ 91.35

OVERTIME PAY

See (B, B1, Q, *V) on OVERTIME PAGE

*NOTE: Benefits are calculated for every hour paid.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 18, 19) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES PER HOUR:

6 month terms at the following rate:

1st	\$ 30.23	\$ 30.36
2nd	30.83	30.96
3rd - 6th	31.44	31.57

Supplemental Benefits		
PER HOUR PAID:	62.47	63.48

4-40/361-Str

Ironworker

03/01/2025

JOB DESCRIPTION Ironworker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES

Rockland: Southern section - south of Convent Road and east of Blue Hills Road.

WAGES

Per hour: 07/01/2024

Reinforcing & Metal Lathing	\$ 56.95

"Base" Wage	55.20 plus \$ 1.75

"Base" Wage is used to calculate overtime hours only.

SUPPLEMENTAL BENEFITS

Per hour:	
Reinforcing & Metal Lathing	\$ 44.63

OVERTIME PAY

See (B, E, Q, *X) on OVERTIME PAGE

*Only \$23.50 per Hour for non worked hours

Supplemental Benefit Premiums for Overtime Hours worked:

Time & One Half	\$ 51.13
Double Time	57.63

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 11, 13, *18, **19, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year terms at the following wage rates:

Prior to 01/01/2020:

1st term	2nd term	3rd term	4th Term
Wage Per Hour:			
\$ 22.55	\$ 28.38	\$ 34.68	\$ 37.18
"Base" Wage			
\$21.00	\$26.80	\$33.10	\$35.60
plus \$1.55	plus \$1.58	plus \$1.58	plus \$1.58

"Base" Wage is used to calculate overtime hours ONLY.

SUPPLEMENTAL BENIFITS

Per Hour:

1st term	2nd term	3rd term	4th Term
\$18.17	\$21.34	\$22.00	\$22.50

After 01/01/2020:

1st term	2nd term	3rd term	4th Term
Wage Per Hour:			
\$ 22.55	\$ 23.60	\$ 24.60	\$ 25.65
"Base" Wage			
\$21.00	\$22.00	\$23.00	\$24.00
plus \$1.55	plus \$1.60	plus \$1.60	plus \$1.65

"Base" Wage is used to calculate overtime hours ONLY.

SUPPLEMENTAL BENIFITS

Per Hour:

1st term	2nd term	3rd term	4th Term
\$18.40	\$17.40	\$16.45	\$15.45

4-46Reinf

Laborer - Building

03/01/2025

JOB DESCRIPTION Laborer - Building

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour: 07/01/2024

Building Laborer \$ 44.30

Base Wage* 41.65

* Base Wage is for Premium/Overtime calculations only (\$2.65 difference)

SUPPLEMENTAL BENEFITS

Per Hour:

Building Laborer \$ 32.06

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

See also(H)for Fire Watch on OVERTIME PAGE

Asbestos Worker See (B, H)

NOTE: Premium/Overtime is to be calculated on Base Wage Only

Example - \$41.65 x time and one half = \$62.48 + \$2.65 = \$65.13

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 25) on HOLIDAY PAGE

Asbestos Worker see (5,6,8 & 28)

REGISTERED APPRENTICES

Regular Hours Work Terms

Term #1 1 hr to 1000hrs

Term #2 1001hrs to 2000hrs

Term #3 2001hrs to 3000hrs

Term #4 3001hrs to 4000hrs

Wages per hour:

1st Term	\$ 18.42
2nd Term	23.54
3rd Term	29.08
4th Term	34.07

Benefits per hour

1st Term	\$ 24.82
2nd Term	26.25
3rd Term	26.68
4th Term	26.89

Laborer - Building	03/01/2025

JOB DESCRIPTION Laborer - Building

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour:	07/01/2024	01/06/2025

Asbestos, Lead and Hazardous Material Abatement Laborer	\$ 40.55	\$ 41.15

(Re-Roofing Removal See Roofer)

NOTE: Asbestos removed from Mechanical Systems not to be scrapped
See Asbestos Worker

SUPPLEMENTAL BENEFITS

Per Hour:

Laborer	\$ 20.10	\$ 21.00

OVERTIME PAY

See (B, B2, I) on OVERTIME PAGE

07/01/2024 - *Calculate at \$39.00 per hour then add \$1.55

01/06/2025 - *Calculate at \$39.25 per hour then add \$1.90

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 28) on HOLIDAY PAGE

REGISTERED APPRENTICES

1000 hour terms at the following:

Per Hour:

1st Term	\$ 21.00*	\$ 21.48*
2nd Term	22.00**	22.48**
3rd Term	25.00***	25.48***
4th Term	27.00****	27.48****

SUPPLEMENTAL BENEFIT

Per Hour:

All Terms	\$ 14.35	\$ 15.07

OVERTIME PAY:

07/01/2024

*Calculate at \$20.00 per hour then add \$1.00

**Calculate at \$21.00 per hour then add \$1.00

***Calculate at \$24.00 per hour then add \$1.00

****Calculate at \$26.00 per hour then add \$1.00

01/06/2025

*Calculate at \$21.20 per hour then add \$1.28

**Calculate at \$22.20 per hour then add \$1.28

***Calculate at \$24.20 per hour then add \$1.28

***Calculate at \$26.20 per hour then add \$1.28

4-NYDC(78)

Laborer - Heavy&Highway	03/01/2025

JOB DESCRIPTION Laborer - Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Laborer (Heavy/Highway):

GROUP # 1: Asphalt Rakers, Concrete Curb Formsetters.

GROUP # 2: Asphalt Shovelers, Roller Boys and Tampers.

GROUP # 3: Basic Laborer, Power Tool(Jackhammer), Landscape Construction(Non-Building), Traffic Control Personnel(flaggers)

WAGES PER HOUR:	07/01/2024	06/01/2025
GROUP # 1		
Total Wage Paid	\$ 62.08	Additional
"Base Wage"	52.83*	\$ 2.25/Hr**
GROUP # 2		
Total Wage Paid	60.61	
"Base Wage"	51.36*	
GROUP # 3		
Total Wage Paid	56.14	
"Base Wage"	46.89*	

NOTE: * "Base Wage" for Premium/Overtime calculation Only. \$9.25 is difference between "Base" and "Total".

(**)To be allocated at a later date for all groups.

SHIFT WORK

Additional 30% to "Base Wage" for all hours worked on New York State D.O.T. and/or other Government Mandated Off-Shift Work.
Hazardous Material Work add an Additional 10% of base wage

SUPPLEMENTAL BENEFITS

Per Hour:
ALL GROUPS \$ 36.98

After Forty (40) paid hours in a work week

OVERTIME PAY 21.74

OVERTIME PAY

See (B, E2, F) on OVERTIME PAGE

NOTES: Premium/Overtime Pay to be calculated on "Base Wage" ONLY

Example Group#3: \$46.89 X Time and One Half = \$70.33 + \$9.25 = \$79.58

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (1) on HOLIDAY PAGE

REGISTERED APPRENTICES

1000 hour(s) Terms at the following Percentage of the "Base Wage" except
4th Term calculate at Total Wage Paid.

1st 0-1000/Hrs.	60%
2nd 1001-2000/Hrs.	70%
3rd 2001-3000/Hrs.	80%
4th 3001-4000/Hrs.	90%

Supplemental Benefits per hour:

All APPRENTICES \$ 36.98

After Forty(40) paid hours in a work Week
21.74

4-1298

Mason	03/01/2025

JOB DESCRIPTION Mason

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour: 07/01/2024

Brick/Block Layer \$ 67.14

Base Wage for OT Calculation \$ 55.93

SUPPLEMENTAL BENEFITS

Per Hour:

Brick/Block Layer \$ 34.90

OVERTIME PAY

See (A, E, E2, Q) on OVERTIME PAGE

Note: OT Calculated on Base Wage plus \$ 11.21/hr.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(800 hour) Terms at the following Percentage of Journey workers "Base Wage" plus \$ 5.94/hr.:

1st	2nd	3rd	4th	5th
50%	60%	70%	80%	90%

Supplemental Benefits per hour:

All Apprentices \$ 24.70

4-1Brk

Mason - Building

03/01/2025

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Nassau, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2024 12/02/2024

Tile Setters \$ 63.91 \$ 64.16

SUPPLEMENTAL BENEFITS

Per Hour: \$ 27.66* \$ 28.11*
+8.50 +8.51

* This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

Work beyond 10 hours on Saturday shall be paid at double the hourly wage rate.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage per hour:

(750 hour) term at the following wage rate:

Term:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1-750	751-1500	1501-2250	2251-3000	3001-3750	3751-4500	4501-5250	5251-6000	6001-6750	6501-7000

07/01/2024									
\$22.19	\$27.21	\$34.45	\$39.46	\$43.07	\$46.58	\$50.23	\$55.24	\$57.71	\$62.00
12/02/24									
\$22.29	\$27.35	\$34.36	\$39.41	\$43.05	\$46.60	\$50.29	\$55.33	\$57.84	\$62.20

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
07/01/2024									
\$12.55*	\$12.55*	\$15.36*	\$15.36*	\$16.36*	\$17.86*	\$18.86*	\$18.86*	\$18.86*	\$24.11*
+\$.76	+\$.81	+\$.91	+\$.96	+\$1.43	+\$1.48	+\$1.91	+\$1.97	+\$4.57	+\$5.18
12/02/24									
\$12.70*	\$12.70*	\$15.81*	\$15.81*	\$16.81*	\$18.31*	\$19.31*	\$19.31*	\$19.31*	\$24.56*
+\$.76	+\$.81	+\$.91	+\$.96	+\$1.43	+\$1.48	+\$1.91	+\$1.97	+\$4.57	+\$5.18

* This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/52A

Mason - Building

03/01/2025

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Building

	07/01/2024	01/01/2025
Wages per hour:		
Mosaic & Terrazzo Mechanic	\$ 60.98	\$ 61.33
Mosaic & Terrazzo Finisher	58.96	59.72

SUPPLEMENTAL BENEFITS

Per hour:

Mosaic & Terrazzo Mechanic	\$ 31.36* + \$9.78	\$ 31.46* + \$10.39
Mosaic & Terrazzo Finisher	\$ 31.36* + \$9.77	\$ 31.46* + \$10.38

*This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY

See (A, E, Q) on OVERTIME PAGE

07/01/2024- Deduct \$7.00 from hourly wages before calculating overtime.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE
Easter Sunday is an observed holiday. Holidays falling on a Saturday will be observed on that Saturday. Holidays falling on a Sunday will be celebrated on the Monday.

REGISTERED APPRENTICES

Wages Per hour:

	1st 0- 1500	2nd 1501- 3000	3rd 3001- 3750	4th 3751- 4500	5th 4501- 5250	6th 5251- 6000
07/01/2024	\$ 25.19	\$ 32.39	\$ 38.18	\$ 40.78	\$ 49.00	\$ 55.75
01/01/2025	25.36	32.60	39.95	41.09	49.37	56.15

Supplemental Benefits per hour:

07/01/2024	\$7.12* + 3.43	\$9.16* + 4.40	\$17.22* + 5.87	\$23.86* + 6.84	\$24.86* + 7.83	\$27.36* + 8.80
01/01/2025	\$7.12* + 3.64	\$9.16* + 4.67	\$15.72* + 6.24	\$23.86* + 7.27	\$24.86* + 8.31	\$27.36* + 9.35

*This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/3

Mason - Building

03/01/2025

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:

	07/01/2024	01/06/2025
Building-Marble Restoration:		
Marble, Stone & Terrazzo Polisher	\$ 47.72	\$ 47.93

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker:

Building-Marble Restoration:

Marble, Stone &

Polisher

\$ 31.50

\$ 31.86

OVERTIME PAY

See (B, *E, Q, V) on OVERTIME PAGE

* On Saturdays, 8th hour and successive hours paid at double hourly rate.

HOLIDAY

Paid:

See (1) on HOLIDAY PAGE

Overtime:

See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES per hour:

900 hour term at the following wage:

	1st 1- 900	2nd 901- 1800	3rd 1801- 2700	4th 2701
07/01/2024	\$ 33.40	\$ 38.18	\$ 42.94	\$ 47.72
01/06/2025	33.54	38.34	43.13	47.93
Supplemental Benefits Per Hour:				
07/01/2024	29.06	29.87	30.69	31.50
01/06/2025	29.59	30.34	31.11	31.86

9-7/24-MP

Mason - Building

03/01/2025

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per Hour:

07/01/2024

01/06/2025

Marble Cutters & Setters

\$ 63.92

\$ 64.21

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker

\$ 40.05

\$ 40.51

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY

Paid:

See (1) on HOLIDAY PAGE

Overtime:

See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage Per Hour:

750 hour terms at the following wage

1st	2nd	3rd	4th	5th	6th	7th	8th
0- 3000	3001- 3750	3751- 4500	4501- 5250	5251- 6000	6001- 6750	6751- 7500	7500+
07/01/2024							
\$ 27.01	\$ 40.52	\$ 43.88	\$ 47.26	\$ 50.64	\$ 54.32	\$ 60.71	\$ 63.92
01/06/2025							
\$ 27.24	\$ 40.84	\$ 44.25	\$ 47.63	\$ 51.05	\$ 54.58	\$ 60.99	\$ 64.21

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th
07/01/2024							
\$ 26.42	\$ 29.76	\$ 30.61	\$ 31.44	\$ 32.28	\$ 37.55	\$ 39.23	\$ 40.05
01/06/2025							
\$ 26.88	\$ 30.14	\$ 30.95	\$ 31.78	\$32.59	\$38.07	\$ 39.71	\$ 40.51

9-7/4

Mason - Building

03/01/2025

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Nassau, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2024 12/02/2024

Tile Finisher \$ 49.08 \$ 49.21

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per Hour: \$ 24.56* \$ 25.01*
+ 8.32 + 8.33

*This portion of benefits is subjected to same premium rate as shown for overtime wages

OVERTIME PAY

See (B, E, Q, *V) on OVERTIME PAGE

*Work beyond 10 hours on a Saturday shall be paid at double the hourly wage rate.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

9-7/88A-tf

Mason - Building

03/01/2025

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour: 07/01/2024 01/06/2025

Marble, Stone, Maintenance Finishers: \$ 27.72 \$ 27.99

Note 1: An additional \$2.00 per hour
for time spent grinding floor using
"60 grit" and below.

Note 2: Flaming equipment operator
shall be paid an additional \$25.00 per day.

SUPPLEMENTAL BENEFITS

Per Hour:

Marble, Stone Maintenance Finishers: \$ 15.74 \$ 15.88

OVERTIME PAY

See (B, *E, Q, V) on OVERTIME PAGE

*Double hourly rate after 8 hours on Saturday

HOLIDAY

Paid: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE

1st term apprentice gets paid for all observed holidays.

REGISTERED APPRENTICES

WAGES per hour: 07/01/2024 01/06/2025
0-750 \$ 22.32 \$ 22.91

751-1500	23.04	23.59
1501-2250	23.75	24.26
2251-3000	24.48	24.95
3001-3750	25.56	25.96
3751-4500	27.00	27.32
4501+	27.72	27.99

Supplemental Benefits:
Per hour:

0-750	12.69	12.43
751-1500	13.10	12.89
1501-2250	13.51	13.35
2251-3000	13.91	13.80
3001-3750	14.52	14.50
3751-4500	15.33	15.41
4501+	15.74	15.88

9-7/24M-MF

Mason - Building / Heavy&Highway**03/01/2025**

JOB DESCRIPTION Mason - Building / Heavy&Highway

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour: 07/01/2024 01/06/2025

Marble-Finisher \$ 49.99 \$ 50.22

SUPPLEMENTAL BENEFITS

Journeyworker:
Per hour

Marble- Finisher \$ 37.39 \$ 37.69

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

Work beyond 8 hours on a Saturday shall be paid at double the rate.

HOLIDAY

Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

When an observed holiday falls on a Sunday, it will be observed the next day.

9-7/20-MF

Mason - Building / Heavy&Highway**03/01/2025**

JOB DESCRIPTION Mason - Building / Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour: 07/01/2024

Cement Mason \$ 57.72

SUPPLEMENTAL BENEFITS

Per Hour:

Cement Mason \$ 34.66

1.5 X overtime rate \$ 62.95

2 X overtime rate \$ 69.32

OVERTIME PAY

See (B1, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 11, 13, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year terms at the following wage:

1st Term	\$ 23.39
2nd Term	\$ 28.29
3rd Term	\$ 33.69

Supplement Benefits per hour paid:

	ST	1.5X OT	2X OT
1st Term	\$ 14.86	\$ 22.30	\$ 29.72
2nd Term	\$ 15.16	\$ 22.75	\$ 30.32
3rd Term	\$ 15.27	\$ 22.91	\$ 30.54

4-780

Mason - Building / Heavy&Highway

03/01/2025

JOB DESCRIPTION Mason - Building / Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

NOTE: Shall include but not limited to Precast concrete slabs (London Walks) Marble and Granite pavers 2'x 2' or larger.

Per Hour:

	07/01/2024	05/01/2025
Stone Setter	\$ 69.91	Additional
Base Rate	53.84*	\$ 3.42/Hr+
Stone Tender	\$51.82	
Base Rate	44.54*	

(+)To be allocated at a later date for all classes.

SUPPLEMENTAL BENEFITS

Per Hour:

Stone Setter	\$ 42.52
Stone Tender	23.15

OVERTIME PAY

See (*C, **E, Q) on OVERTIME PAGE

* Base Rates are used to Calculate Overtime Premiums then adding in: \$15.81/Hr. for Stone Setter or \$7.28/Hr. for Stone Tender.

** On weekdays the eighth (8th) and ninth (9th) hours are time and one-half all work thereafter is paid at double the hourly rate.

*** The first nine (9) hours on Saturday is paid at time and one-half all work thereafter is paid at double the hourly rate.

HOLIDAY

Paid: See (*18) on HOLIDAY PAGE

Overtime: See (5, 6, 10) on HOLIDAY PAGE

Paid: * Must work first 1/2 of day.

REGISTERED APPRENTICES

Per Hour:

Stone Setter(800 hour) terms at the following Percentage of Stone Setters Base wage rate per hour plus \$7.32:

1st	2nd	3rd	4th	5th	6th
50%	60%	70%	80%	90%	100%

Supplemental Benefits:

All Apprentices \$ 25.85

4-1Stn

Mason - Heavy&Highway

03/01/2025

JOB DESCRIPTION Mason - Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour: 07/01/2024

Pointer, Caulkers & Cleaners \$ 63.69

SUPPLEMENTAL BENEFITS

Per Hour:

Pointer, Cleaners & Caulkers \$ 31.90

OVERTIME PAY

See (B, E2, H) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour:

One (1) year terms at the following wage rates.

1st	2nd	3rd	4th
\$ 32.76	\$ 37.09	\$ 42.97	\$ 51.60

Apprentices Supplemental Benefits:
(per hour paid)

\$ 15.40	\$ 21.70	\$ 24.45	\$ 25.45

4-1PCC

Operating Engineer - Building

03/01/2025

JOB DESCRIPTION Operating Engineer - Building

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

BUILDING CATEGORIES:

CLASS " AA "CRANES:

ABI Machine (150,000lbs and over or 149,999lbs and under when driving steel sheet piles),Crane, Truck Crane, Hydraulic Crane(Over 75 tons), Derrick, Dragline, Dredge, Crawler Crane, Tower Crane & Pile Driver, Vertical Drill Rig (115,000lbs and over and 114,999lbs and under).

CLASS "A":

ABI Machine (149,999 and under used for augering and drilling), Asphalt Spreader, Backhoe Crawler(360 swing), Barrier Machine, CAP (ice machine), Cherrypicker CAP (over 70 tons), CMI or Maxim Spreader, Concrete Pump, Directional Boring, GradAll, Grader, Hydraulic Cherrypicker/Crane (2seats), Hoist (3drum or multi platform), Laser Screed, Loading Machine (Bucket/CAP 10yrds or more), Milling Machine (Large), Pipeline Welder, Plant Engineer, Power Winch (stone setting/structural steel), Powerhouse, Scoop Carry-All Scraper (in tandem), Side boom Tractor (includes tank work), Track Alignment Machine, Stone Spreader (self propelled), Striping Machine (long line/truck mounted), Tree Grapple, Zamboni.

CLASS "B":

Backhoe (other than 360), Belt Screte, Boom Truck, Bulldozer, Boring Machine/Auger, Cherry Picker(under 70 Tons), Hydraulic Crane(under 75 Tons), Conveyor-Multi, Curb Machine (asphalt or concrete), Dinky Locomotive, Drill Rig (dowels)Fork Lift, Hoist (2 Drum), Loading Machine & Front End Loader, Mechanical Compactors (machine drawn), Mulch Machine(Machine Fed), Post Hole/Auger, Power Wincher (Not Included in Class "A"), Asphalt Roller, Hydraulic Pump with Boring Machine, Scoop, Carryall/Scraper, Skid Loader/Skid Steer/Bobcat, Trenching Machine, Vermeer Cutter, Work Boat, Inspection/Safety Boat.

CLASS "C":

Concrete Finish/Saw/Spreader, Dirt Roller, Hoist (1 drum, Clam Shell), Interior Hoist, Milling Machine (small), Oiler Truck Crane (pile work), Power Broom, Vactor Truck, VacAll.

CLASS "D":

Boiler (thermoplastic), Concrete Breaker, Conveyer, Curing Machine, Fork Lift or Walk Behind (power operated), Generator, Hydra Hammer, Compactors (mechanical or hand operated), Maintenance Engineer (small equipment/well point/welding & burning), Mechanic (field man), Micro-Trap with Compressor, Oiler (Truck Crane Boom 100ft or more) Power Winch Truck Mounted (Stone Setter/Struct. Steel), Pin Puller, Portable Heaters, Power Buggies, Pump (double action diaphragm), Pump (4 inch or over), Pump (hydraulic/submersible) Jet Pump, Pulvi-Mixer, Ridge Cutter, Shot Blaster.

CLASS "E":

Batching Plant, Compressor (structural steel/2 or more battery), Generator (small), Grinder, Ground Heater, Power Grinder, Mixer with Skip, Mulching Machine (hand fed), Oiler, Pipeline Welder Helper, Power Washer, Pumps (up to 3 inch/single action 1 to 3 inches), Pump (gypsum), Root Cutter, Stump Chipper, Track Tamper, Tractor (caterpillar or wheel), Trenching Machine (hand), Welding Machine (pile work/structural steel), Deckhand on Work/Inspection/Safety Boat.

	07/01/2024	06/01/2025
Class "AA"	\$ 93.08	
Cranes:		Additional
Boom length over 100 feet add \$ 1.00 per hour		3%/hr*
Boom length over 150 feet add \$ 1.50 per hour		
Boom length over 250 feet add \$ 2.50 per hour		
Boom length over 350 feet add \$ 3.00 per hour		
Class "A"	\$ 77.79	
Add \$3.50 for Hazardous Waste Work		
Class "B"	\$ 73.91	
Add \$2.50 for Hazardous Waste Work		
Class "C"	\$ 71.33	
Add \$1.50 for Hazardous Waste Work		
Class "D"	\$ 54.56	
Add \$1.00 for Hazardous Waste Work		
Class "E"	\$ 52.29	

(*)To be allocated at a later date for all classes.

SUPPLEMENTAL BENEFITS

Per Hour:

All Classes	\$ 41.65
Overtime Rate	\$ 37.10

OVERTIME PAY

See (D, O) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6, 15, 16, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

One(1) Year Terms at the following Rate:

1st Term	\$ 28.00
2nd Term	\$ 29.00
3rd Term	\$ 30.00

Supplemental Benefits per hour:

All Apprentices	\$ 15.64
Overtime Rate	\$ 5.60

4-138

Operating Engineer - Building / Heavy&Highway

03/01/2025

JOB DESCRIPTION Operating Engineer - Building / Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour:	07/01/2024	08/01/2024
Well Driller	\$ 41.85	\$ 43.11
Well Driller Helper	\$ 36.26	\$ 37.35

Hazardous Waste Differential
Added to Hourly Wage:

Level A	\$ 3.00
Level B	\$ 2.00
Level C	\$ 1.00

Monitoring Well Work
Add to Hourly Wage:

Level A	\$ 3.00
Level B	\$ 2.00

SUPPLEMENTAL BENEFITS

Per Hour:

Well Driller & Helper	10% of straight time rate plus \$ 13.50

Additional \$ 4.25/Hr. for Premium Time Hours Worked

OVERTIME PAY

See (B2, P, S) on OVERTIME PAGE

HOLIDAY

Paid:	See (5, 6, 16, 23) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 23) on HOLIDAY PAGE

REGISTERED APPRENTICES

Apprentices at 12 Month Terms

Wages Per Hour:

1st Term	\$ 28.00
2nd Term	\$ 29.00
3rd Term	\$ 30.00

SUPPLEMENTAL BENEFITS

Per Hour:

All Terms	10% of Wage + \$ 13.50

Additional \$4.25/Hr. for premium time hours worked.

4-138well

Operating Engineer - Heavy&Highway

03/01/2025

JOB DESCRIPTION Operating Engineer - Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

HEAVY and HIGHWAY CATEGORIES:

CLASS "AA" CRANES:

ABI Machine (150,000lbs and over), ABI Machine (149,000lbs and under driving steel sheets), Crane, Truck Crane, Derrick, Dragline, Dredge, Crawler Crane, Tower Crane, Pile Driver, Hydraulic Crane (75 Tons & Over).

CLASS "A":

ABI Machine (149,000lbs and under for Augering or Drilling), Asphalt Spreader, Backhoe Crawler (360 Swing & over 150,000lbs), Backhoe Crawler (360 Swing & under 149,000lbs), Barrier Machine, Cherrypicker Cap (over 70 tons), CMI or Maxim Spreader, Concrete Pump, Directional Boring, Grader, Gradall, Hoist (3 drum or multi-platform), Hydraulic Cherrypicker/crane (2 seats), Loading Machine (bucket 10 yds. or more), Laser Screed, Milling Machine (Large), Pipeline Welder, Plant Engineer. Power Winch-Stone Setting/Structural Steel or Truck Mounted, Powerhouse, Scoop-Carryall-Scaper in Tandem, Side Boom Tractor, Side Boom Tractor (Tank Work), Stone Spreader(self propelled), Stripping Machine (long line/truck mounted), Tree Grapple, Tank Work, Track Alignment Machine.

CLASS "B":

Backhoe (other than 360), Belt Screte, Boom Truck, Bulldozer, Boring Machine/Auger, Hydraulic Crane(75 Tons & Under), Cherry Picker (under 70 tons), Conveter-Multi, Curb Machine Asphalt/Concrete, Dinky Locomotive, Drill Rig for Dowels, Field Mechanic, Fork Lift, Hoist (2 Drum), Loading Machine, Loading Machine (Front End), Mechanical Compactors (Machine Drawn), Mulching Machine (Machine Fed), Post Hole/Auger, Power Winch (other than structural steel), Pump Hydraulic (with boring machine), Asphalt Roller, Scoop (carry-all, scraper), Skid Loader/Steer, Vermeer Cutter, Work Boat, Inspection & Safety Boat.

CLASS "C":

Concrete Finish/Saw/Spreader Machines, Dirt Roller, Hoist (1 drum, clam shell), Interior Hoist, Oiler Truck Crane(Pile work), Power Broom(Sweeper), Small Milling Machine, Vactor Truck/Vac-All Truck, Tack Oil Truck.

CLASS "D":

Boiler (Thermoplastic), Concrete Breaker, Conveyor, Curing Machine, Fireman, Fork lift (walk behind), Generator, Hydra Hammer, Maintenance Engineer (small equipment/Well Point/Welding & Burning), Compactors (hand operated), Pin Puller, Portable Heaters, Power Buggies, Pulvi Mixer, Pumps (double action/4 inch and over/Hydraulic/Submersible & Jet), Ridge Cutter, Robotic Unit Operator(Trenchless Pipe Rehab-Cleaning & Television of Sewers/CCTV Inspection), Shotblaster.

CLASS "E":

Batching Plant (On Job Site), Compressor (structural steel/2 or more in battery), Generator(small), Grinder, Ground Heater(boilers), Power Grinder, Mixer (with skip), Mulching Machine (hand feed), Oiler, Pipeline Welder Helper, Power Washer, Pump(up to 3 inches/Gypsum/Single action 1 to 3 inches), Root Cutter, Stump Grinder, Track Tamper, Tractor (caterpillar or wheel), Trenching Machine (hand), Welding Machine (Pile Work/Structural Steel), Deckhand (on Work/Inspection/Safety Boat).

	07/01/2024	06/01/2025
Class "AA"	\$ 92.25	
Cranes:		Additional
Boom Length over 100 feet add \$ 1.00 per hour		3%/hr
Boom Length over 150 feet add \$ 1.50 per hour		
Boom Length over 250 feet add \$ 2.00 per hour		
Boom Length over 350 feet add \$ 3.00 per hour		
Class "A"	81.94	
Add \$3.50 for Hazardous Waste Work.		
Class "B"	76.72	
Add \$2.50 for Hazardous Waste Work.		
Class "C"	74.07	
Add \$1.50 for Hazardous Waste Work		
Class "D"	55.88	
Add \$1.00 for Hazardous Waste Work		
Class "E"	54.56	

(*)To be allocated at a later date for all classes.

SHIFT WORK

ADD 30% to straight time hourly wage for NEW YORK STATE D.O.T. and other GOVERNMENTAL MANDATED off-shift work.

SUPPLEMENTAL BENEFITS

Per Hour:

ALL CLASSES \$ 41.40

Note: OVERTIME AMOUNT 37.10

OVERTIME PAY

See (D, O) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 8, 15, 20, 22, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 8, 15, 20, 22, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage per hour:

REGISTERED APPRENTICES

One(1) Year Terms at the following Rate:

1st Term	\$ 28.00
2nd Term	\$ 29.00
3rd Term	\$ 30.00

SUPPLEMENTAL BENEFITS:

APPRENTICES	15.64
Note: Overtime Amount	5.60

JOB DESCRIPTION Operating Engineer - Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Party Chief - One who directs a survey party

Instrument Man - One who runs the instrument and assists Party Chief

Rodman - One who holds the rod and in general, assists the survey party

Categories cover GPS & Under Ground Surveying

Per Hour: 07/01/2024
Heavy Highway/Building

Party Chief	\$ 76.04
Instrument Man	56.67
Rodman	47.80

SUPPLEMENTAL BENEFITS

Per Hour:

Heavy Highway/Building \$ 43.40

Premium*:
Heavy Highway/Building 47.70

Premium**:
Heavy Highway/Building 57.58

* Applies to instances where 1-1/2 regular rate are paid

**Applies to instances where 2 times the rate are paid.

OVERTIME PAY

See (B, *E, Q) on OVERTIME PAGE

* Double-time paid on the 9th hour on Saturday.

HOLIDAY

Paid: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

Overtime: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

4-15D-N/S co.

Operating Engineer - Marine Dredging

03/01/2025

JOB DESCRIPTION Operating Engineer - Marine Dredging

DISTRICT 4

ENTIRE COUNTIES

Albany, Bronx, Cayuga, Clinton, Columbia, Dutchess, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Orange, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES

These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for all equipment and operators are only for marine dredging work in navigable waters found in the counties listed above.

Per Hour: 07/01/2024

CLASS A1 \$ 45.26
Deck Captain, Leverman,
Mechanical Dredge Operator,
Licensed Tug Operator 1000HP or more.

CLASS A2 40.33
Crane Operator (360 swing)

CLASS B To conform to Operating Engineer
Dozer, Front Loader Prevailing Wage in locality where work
Operator on Land is being performed including benefits.

CLASS B1 39.14
Derrick Operator (180 swing)
Spider/Spill Barge Operator
Operator II, Fill Placer, Engineer
Chief Mate, Electrician, Chief Welder,

Maintenance Engineer,Licensed Boat, Crew Boat Operator

CLASS B2 36.84
Certified Welder

CLASS C1 35.83
Drag Barge Operator,
Steward, Mate,
Assistant Fill Placer

CLASS C2 34.68
Boat Operator

CLASS D 28.81
Shoreman, Deckhand, Oiler,
Rodman, Scowman, Cook,
Messman, Porter/Janitor

SUPPLEMENTAL BENEFITS

Per Hour:

THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

All Classes A & B \$ 12.00 plus 7%
of straight time
wage, Overtime hours
add \$ 0.63

All Class C & D \$ 11.75 plus 7%
of straight time
wage, Overtime hours
add \$ 0.50

OVERTIME PAY

See (B2, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

Operating Engineer - Survey Crew - Consulting Engineer

03/01/2025

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES

Dutchess: That part in Dutchess County lying South of the North City line of Poughkeepsie.

WAGES

Feasibility and preliminary design surveying, any line and grade surveying for inspection or supervision of construction.

Per hour: 07/01/2024
Survey Classifications

Party Chief \$ 49.39
Instrument Man 40.96
Rodman 35.63

SUPPLEMENTAL BENEFITS

Per Hour:

All Crew Members: \$ 23.75

OVERTIME PAY

OVERTIME:..... See (B, E*, Q, V) ON OVERTIME PAGE.

*Double-time paid on the 9th hour on Saturday.

HOLIDAY

Paid: See (5, 6, 7, 11, 16) on HOLIDAY PAGE
Overtime: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

9-15dconsult

Operating Engineer - Trenchless Pipe Rehab

03/01/2025

JOB DESCRIPTION Operating Engineer - Trenchless Pipe Rehab

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

IMPORTANT NOTE: This Category & Classifications are now located in
Operating Engineers/Heavy Highway & Laborers/ Heavy Highway.

Per Hour:

07/01/2024
(SEE)

Robotic Unit Operator

Operator(class D)

Technician/Boiler, Generator

Operator(class D)

AM Liner/Hydra Seal

Laborer(Grp#3)

Hobas Pipe, Polyethylene Pipe or
Pull and Inflate Liner

Laborer(Grp#3)

OVERTIME PAY

HOLIDAY

4-138TrchPReh

Painter

03/01/2025

JOB DESCRIPTION Painter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:

07/01/2024

05/01/2025
Additional

Brush

52.86*

\$ 2.62**

Abatement/Removal of lead based
or lead containing paint on
materials to be repainted.

52.86*

Spray & Scaffold

\$ 55.86*

Fire Escape

55.86*

Decorator

55.86*

Paperhanger/Wall Coverer

55.09*

*Subtract \$ 0.10 to calculate premium rate.

** To be allocated at a later date.

SHIFT WORK

Counties of Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, and Westchester; Agency/Government mandated off-shift work to be paid at time and one-half the hourly wage.

SUPPLEMENTAL BENEFITS

Per hour:

Paperhanger

\$ 36.73

All others

34.31

Premium

38.28**

**Applies only to "All others" category, not paperhanger journeyworker.

OVERTIME PAY

See (A, E, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

One (1) year terms at the following wage rate.

Per hour:	07/01/2024
Appr 1st term...	\$ 20.22*
Appr 2nd term...	25.93*
Appr 3rd term...	31.61*
Appr 4th term...	42.40*

*Subtract \$ 0.10 to calculate premium rate.

Supplemental benefits:

Per Hour:	
Appr 1st term...	\$ 16.89
Appr 2nd term...	20.95
Appr 3rd term...	24.10
Appr 4th term...	30.57

8-NYDC9-B/S

Painter

03/01/2025

JOB DESCRIPTION Painter

DISTRICT 8

ENTIRE COUNTIES

Putnam, Suffolk, Westchester

PARTIAL COUNTIES

Nassau: All of Nassau except the areas described below: Atlantic Beach, Ceaderhurst, East Rockaway, Gibson, Hewlett, Hewlett Bay, Hewlett Neck, Hewlett Park, Inwood, Lawrence, Lido Beach, Long Beach, parts of Lynbrook, parts of Oceanside, parts of Valley Stream, and Woodmere. Starting on the South side of Sunrise Hwy in Valley Stream running east to Windsor and Rockaway Ave., Rockville Centre is the boundary line up to Lawson Blvd. turn right going west all the above territory. Starting at Union Turnpike and Lakeville Rd. going north to Northern Blvd. the west side of Lakeville road to Northern blvd. At Northern blvd. going east the district north of Northern blvd. to Port Washington Blvd. West of Port Washington blvd.to St.Francis Hospital then north of first traffic light to Port Washington and Sands Point, Manor HAVen, Harbour Acres.

WAGES

Per hour:	07/01/2024	05/01/2025
Drywall Taper:	\$ 52.86*	Additional
Scaffold:	\$ 55.86*	\$ 2.62**

*Subtract \$ 0.10 to calculate premium rate.

** To be allocated a later date.

SHIFT WORK

Agency/Government mandated off-shift work to be paid at time and one-half hourly wage

SUPPLEMENTAL BENEFITS

Per hour:	
Journeyman	\$ 34.31

OVERTIME PAY

See (A, E, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages - Per Hour:

1500 hour terms at the following wage rate:

1st term	\$ 20.22*
2nd term	25.93*
3rd term	31.61*
4th term	42.40*

*Subtract \$ 0.10 to calculate premium rate.

Supplemental Benefits - Per hour:
One year term (1500 hours) at the following dollar amount.

1st year	\$ 16.89
2nd year	20.95
3rd year	24.10
4th year	30.57

8-NYDCT9-DWT

Painter**03/01/2025**

JOB DESCRIPTION Painter**DISTRICT 8****ENTIRE COUNTIES**

Bronx, Kings, New York, Queens, Richmond

PARTIAL COUNTIES

Nassau: Atlantic Beach, Ceadershurst, East Rockaway, Hewlett, Hewlett Bay, Hewlett Neck, Hewlett Park, Inwood, Lawrence, Lido Beach, Long Beach, parts of Lynbrook, parts of Oceanside, parts of Valley Stream, and Woodmere. Starting on South side of Sunrise Hwy in Valley Stream running east to Windsor and Rockaway Ave, Rockville is the boundary line up to Lawson Blvd, turning right going west all the above territory. Starting at Union Turnpike & Lakeville Rd going north to northern Blvd. the west side of Lakeville Rd to Northern Blvd. At Northern Blvd doing east the district north of Northern blvd to Port Washington blvd. West of Port Washington blvd to St. Francis Hospital then north of first traffic light to Port Washington & Sands Point, Manor Haven, & Harbour Acres.

WAGES

Per hour:	07/01/2024
Drywall Taper	\$ 57.44

SUPPLEMENTAL BENEFITS

Per Hour:	
Journeyworker:	\$ 25.29

OVERTIME PAY

See (A, E, Q) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (4, 6, 8, 11, 18, 19, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage per hour:

1st term	\$ 22.30
2nd term	28.99
3rd term	34.67
4th term	46.05

Supplemental Benefits per hour:

1st term	\$ 14.35
2nd term	19.83
3rd term	20.93
4th term	23.12

8-NYC9-1974-DWT

Painter - Bridge & Structural Steel**03/01/2025**

JOB DESCRIPTION Painter - Bridge & Structural Steel**DISTRICT 8****ENTIRE COUNTIES**

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per Hour:	
STEEL:	
Bridge Painting:	07/01/2024
	\$ 56.00
	+ 10.35*

ADDITIONAL \$7.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

NOTE: All premium wages are to be calculated on base rate per hour only.

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (50 hour cap).

NOTE: Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

SHIFT WORK

When directly specified in public agency or authority contract documents for an employer to work a second shift and works the second shift with employees other than from the first shift, all employees who work the second shift will be paid 10% of the base wage shift differential in lieu of overtime for the first eight (8) hours worked after which the employees shall be paid at time and one half of the regular wage rate. When a single irregular work shift is mandated in the job specifications or by the contracting agency, wages shall be paid at time and one half for single shifts between the hours of 3pm-11pm or 11pm-7am.

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker:

\$ 12.43
+ 31.55*

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (50 hour cap).

OVERTIME PAY

See (B, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage - Per hour:

Apprentices: (1) year terms.

1st year	\$ 22.40 + 4.14
2nd year	\$ 33.60 + 6.21
3rd year	\$ 44.80 + 8.28
Supplemental Benefits - Per hour:	
1st year	\$ 1.16 + 12.62
2nd year	\$ 7.46 + 18.93
3rd year	\$ 9.94 + 25.24

NOTE: All premium wages are to be calculated on base rate per hour only.

8-DC-9/806/155-BrSS

Painter - Line Striping

03/01/2025

JOB DESCRIPTION Painter - Line Striping

DISTRICT 8

ENTIRE COUNTIES

Albany, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Nassau, Orange, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per hour:

Painter (Striping-Highway):	07/01/2024	04/01/2025	04/01/2026
Striping-Machine Operator*	\$ 34.12	\$ 35.49	\$ 36.93

Linerman Thermoplastic	41.12	42.74	44.44

Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

SHIFT WORK

When directly specified in public agency or authority contract documents there shall be a 30% night shift premium pay differential for all work performed after 9:00pm and before 5:00am.

SUPPLEMENTAL BENEFITS

Per hour paid:

Journeyworker:

Striping Machine Operator: \$23.65 \$ 24.30 \$ 24.95

Linerman Thermoplastic: 23.65 24.30 24.95

OVERTIME PAY

See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 20) on HOLIDAY PAGE

Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES

One (1) year terms at the following wage rates:

	07/01/2024	01/01/2025	04/01/2025	04/01/2026
1st Term:	\$ 16.00	\$ 16.50	\$ 16.50	\$ 16.50
2nd Term:	20.47	20.47	21.29	22.16
3rd Term:	27.30	27.30	28.39	29.54

Supplemental Benefits per hour:

All terms:	\$ 23.65	\$ 23.65	\$ 24.30	\$ 24.95

8-1456-LS

Painter - Metal Polisher

03/01/2025

JOB DESCRIPTION Painter - Metal Polisher

DISTRICT 8

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

	07/01/2024
Metal Polisher	\$ 39.33
Metal Polisher*	40.43
Metal Polisher**	43.33

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour: 07/01/2024

Journeyworker:

All classification \$ 12.79

OVERTIME PAY

See (B, E, P, T) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour:

One (1) year term at the following wage rates:

	07/01/2024
1st year	\$ 19.67

2nd year	21.63
3rd year	23.60
1st year*	\$ 22.06
2nd year*	22.07
3rd year*	24.14
1st year**	\$ 22.17
2nd year**	24.13
3rd year**	26.10

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:
Per hour:

1st year	\$ 8.69
2nd year	8.69
3rd year	8.69

8-8A/28A-MP

Plasterer	03/01/2025

JOB DESCRIPTION Plasterer

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per hour:

	07/01/2024	08/01/2024
Building:		
Plasterer/Traditional &	\$ 47.72	\$ 47.99
Spraying Fireproofing	+ \$5.00*	+ \$5.62*

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker	\$ 25.35	\$ 26.10

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

*This portion is not subjected to OT premiums.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages:	07/01/2024	08/01/2024
(Per hour)		
800 hours term:		
1st term	\$ 19.30 + 0.68*	\$ 19.44+ 0.68*
2nd term	22.53 + 0.81*	22.69+ 0.81*
3rd term	25.79 + 0.95*	25.98+ 0.95*

*This portion is not subjected to OT premiums.

Supplemental Benefits:

(Per hour):

(800) hours term:

1st term	\$ 11.59	\$ 11.95
2nd term	12.02	12.44
3rd term	12.52	13.08

9-262

Plumber	03/01/2025

JOB DESCRIPTION Plumber

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:	07/01/2024	05/01/2025
Plumber/ PUMP & TANK	\$ 48.24	\$ 48.24

SUPPLEMENTAL BENEFITS

Per Hour:

Plumber	\$ 38.24	\$ 40.74

OVERTIME PAY

See (B, B2, E2, Q, *V) on OVERTIME PAGE
(V) For Sundays & Holidays if Worked Only

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

One(1) Year Terms at the Following
Percentage of Journeyman's wage:

1st Term	30%
2nd Term	40%
3rd Term	50%
4th Term	60%
5th Term	70%

Supplemental Benefits Per Hour:

1st Term	\$ 25.48	\$ 27.98
2nd Term	\$26.22	28.72
3rd Term	\$27.14	29.64
4th Term	\$27.61	30.11
5th Term	\$30.99	33.49

4-200 Pump & Tank

Plumber

03/01/2025

JOB DESCRIPTION Plumber

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:	07/01/2024	11/01/2024	05/01/2025
Plumber	\$ 58.98	\$ 59.73	\$ 60.73

SUPPLEMENTAL BENEFITS

Per Hour:

Plumber	\$ 50.70	\$ 51.45	\$ 51.95

OVERTIME PAY

See (A, E, Q, *V) on OVERTIME PAGE
CODE "V" is only for SUNDAYS and HOLIDAYS THAT ARE WORKED

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

One(1) Year Terms at the following percentage of Plumbers Rate:

1st	2nd	3rd	4th	5th
30%	40%	50%	60%	70%

Supplemental Benefits per hour:

	07/01/2024	11/01/2024	05/01/2025
1st Term	\$ 36.02	\$ 36.77	\$ 37.27

2nd Term	38.51	39.33	39.76
3rd Term	40.03	40.78	42.96
4th Term	41.68	42.43	42.93
5th Term	43.41	44.16	44.66

4-200

Plumber	03/01/2025

JOB DESCRIPTION Plumber **DISTRICT 4**

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:

	07/01/2024	11/01/2024	05/01/2025
Plumber			
MAINTENANCE ONLY	\$35.05	\$ 35.55	\$ 36.05

Maintenance: Correction of problem(s)with the existing fixture or group of fixtures, preventive repairs or servicing of said fixtures

SUPPLEMENTAL BENEFITS

Per Hour:

Plumber			
Maintenance	\$ 22.43	\$ 22.93	\$ 23.43

OVERTIME PAY

See (B, B2, J) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

4-200 Maintance

Roofer	03/01/2025

JOB DESCRIPTION Roofer **DISTRICT 4**

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour	07/01/2024	05/01/2025
ROOFER/Waterproofer		
Total Wage to be Paid	\$ 57.25	Additional \$ 3.25/hr*

"Base" Wage 50.25**

(*)To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per Hour:

ROOFER/Waterproofer	\$ 38.11

OVERTIME PAY

Per Hour:

NEW ROOF SEE (B,E,Q)

RE-ROOF SEE (B,E,E2,Q)

** Overtime Pay to be calculated on "BASE" Wage then add \$7.00.

(Example: \$50.25 x time and one half = \$75.38 + \$7.00 = \$82.38)

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 13, *16, **25) on HOLIDAY PAGE

Note: Time and One Half the Hourly Base Rate + \$7.00 if worked.

REGISTERED APPRENTICES

(1) Year terms at the following Percentage of Roofers/Waterproofers Base Wage.

1st	2nd	3rd	4th
40%	50%	70%	80% + \$ 5.60/Hr.

Supplemental Benefits per hour:

1st Term	\$ 10.64
2nd Term	13.22
3rd Term	26.88
4th Term	36.22

4-154

Sheetmetal Worker	03/01/2025

JOB DESCRIPTION Sheetmetal Worker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per Hour:

07/01/2024 08/01/2024

Sign Erector	\$ 58.00	\$ 60.00

NOTE: Structurally Supported Overhead Highway Signs(See STRUCTURAL IRON WORKER CLASS)

SUPPLEMENTAL BENEFITS

Per Hour:

07/01/2024 08/01/2024

Sign Erector	\$ 57.12	\$ 58.31

OVERTIME PAY

See (B, F, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Per Hour:

6 month Terms at the following percentage of Sign Erectors wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
35%	40%	45%	50%	55%	60%	65%	70%	75%	80%

SUPPLEMENTAL BENEFITS

Per Hour:

07/01/2024

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 18.27	\$ 20.75	\$ 25.22	\$ 25.70	\$ 34.66	\$ 37.74	\$ 41.65	\$ 44.78	\$ 47.93	\$ 51.04

08/01/2024

\$ 18.65	\$ 21.16	\$ 23.69	\$ 26.22	\$35.39	\$ 38.52	\$ 42.55	\$ 45.75	\$ 48.96	\$ 52.15 4-137-SE

Sheetmetal Worker	03/01/2025

JOB DESCRIPTION Sheetmetal Worker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour:

07/01/2024 11/01/2024

Sheetmetal Worker	\$ 61.09	\$ 62.34

Maintenance of Fans Temporary Operation	48.87	51.42

SUPPLEMENTAL BENEFITS

Per Hour:

Sheetmetal Worker	\$ 53.25	\$ 55.00

Maintenance Worker	53.25	55.00

OVERTIME PAY

See (B, E, E2, Q, V) on OVERTIME PAGE

For Maintenance See Codes B,E, Q & V

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Per Hour: Wages

Six(6) Month Terms As Follows:

1st & 2nd Term	\$ 21.26	\$ 21.70
3rd & 4th Term	27.39	27.95
5th & 6th Term	33.52	34.21
7th & 8th Term	42.75	43.63
9th Term	48.55	49.85

Per Hour: Supplemental Benefits

1st & 2nd Term	\$ 19.66	\$ 19.72
3rd & 4th Term	26.73	26.97
5th & 6th Term	31.57	31.98
7th & 8th Term	38.78	39.45
9th Term	43.62	44.47

4-28

Steamfitter

03/01/2025

JOB DESCRIPTION Steamfitter

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour:	07/01/2024	01/01/2025

AC Service/Heat Service & Refrigeration	\$ 46.10	\$ 46.60

Refrigeration, A/C, Oil Burner and Stoker Service and Repair.

NOTE: Refrigeration Compressor installation. (Not to exceed 5 Hp combined on any one project).

NOTE: Air / Heating Compressor installation.(Not to exceed 15 tons combined on any one project).

SUPPLEMENTAL BENEFITS

Per Hour Worked:

AC Service/Heat Service & Refrigeration	\$ 20.96	\$ 22.71

Per hour Paid:	\$ 17.65	\$ 19.65

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 11, 15, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

1 year terms

Wages per hour:

1st Term	\$ 22.31	\$ 22.55
2nd Term	26.94	27.23
3rd Term	31.38	31.72
4th Term	37.90	38.31

Benefits per hour worked:

1st Term	\$ 14.44	\$ 14.93
2nd Term	15.91	16.43
3rd Term	17.41	17.99
4th Term	19.44	20.10

Benefits per hour paid:

1st Term	\$ 11.38	\$ 11.87
2nd Term	12.85	13.37
3rd Term	14.35	14.93
4th Term	16.38	17.04

4-638B-StmFtrRef

Steamfitter

03/01/2025

JOB DESCRIPTION Steamfitter

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

WAGES

Per Hour: 07/01/2024 10/1/2024 03/31/2025

Sprinkler/Steam \$ 69.11 \$ 69.86 Additional
AC/Heat Fitter \$0.75/Hr*

Temporary 52.54 53.11 Additional
Heat & AC \$0.75/Hr*
Fitter

SHIFT WORK

Add 15% to Hourly Wage and Hourly Supplemental Benefit for "Contracting Agency" Mandated Off Shift Work.

SUPPLEMENTAL BENEFITS

Per Hour:

Sprinkler/Steam \$ 53.49
Fitter

Temporary 43.67
Heat & AC
Fitter

OVERTIME PAY

Note: The posted overtime rates are applicable after 8 hours plus Saturday, Sunday and Holidays:

Per Hour:
Wages 07/01/2024 10/01/2024
Sprinkler/Steam \$ 138.22 \$ 139.72
Temp Heat/AC 105.08 106.22

Supplemental Benefits
Sprinkler/Steam 105.99 106.84
Temp Heat/AC 85.35 87.34

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Per hour:

WAGES

1 year Terms	1st	2nd	3rd	4th	5th
07/01/2024	\$ 27.98	\$ 34.96	\$ 41.94	\$ 48.92	\$ 55.90

Supplemental Benefits					
07/01/2024	21.80	27.05	32.28	37.53	42.76
10/01/2024	22.10	27.42	32.73	38.05	43.36

Premium Time Supplemental Benefits					
07/01/2024	43.60	54.10	64.56	75.06	85.52

10/01/2024	43.36	53.94	64.52	77.01	85.68

4-638A-StmSpFtr

Teamster - Asphalt Delivery

03/01/2025

JOB DESCRIPTION Teamster - Asphalt Delivery

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:

Heavy Construction Work:

Shall include the supply of Asphalt for construction, improvement and modification of all or any part of Streets, Highways, Bridges, Tunnels, Railroads, Canals, Dams, Airports, Schools, Power Generation Plants, where distance between project and asphalt plant is not more than 50 miles.

TRUCK DRIVER

07/01/2024

Asphalt Delivery

\$ 42.745

Light Construction Work:

Shall include the supply of Asphalt for construction of Single & Multi Family Homes, Town Houses, Apartment Buildings, including Driveways, Streets and Curbs within those projects. Parking Lots, Office Buildings, where distance between project and asphalt plant is not more than 50 miles.

TRUCK DRIVER

Asphalt Delivery

\$ 42.55

SHIFT WORK

PREMIUM PAY of 25% on straight time hours for New York State D.O.T. and or other GOVERNMENTAL MANDATED off shift work.

SUPPLEMENTAL BENEFITS

Per Hour:

Heavy Construction Work

TRUCK DRIVER

Asphalt Delivery

\$ 55.6025

Light Construction Work

TRUCK DRIVER

Asphalt Delivery

\$ 13.10

OVERTIME PAY

See (B, *B2, E, **I, P, R, T, ***U) on OVERTIME PAGE

Note: (B,E,P,T&*U) Apply to Heavy Construction.

Note: (B2,I,T&*U) Apply to Light Construction.

Note: (*U) Only applies after 8 hours worked on holiday.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, *16, **25) on HOLIDAY PAGE

NOTE:(*16) Paid at Double if Worked; (**25) Paid at Double if Worked.

4-282

Teamster - Building

03/01/2025

JOB DESCRIPTION Teamster - Building

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:

Truck Driver (Building Demolition & Debris, Cesspool & Leachate Pumping)

07/01/2024

Trailers

\$ 37.90

Straight Jobs \$ 37.90

SUPPLEMENTAL BENEFITS

Per Hour:

All Classes: \$ 40.50

OVERTIME PAY

See (B, E, S1) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 11, 12, 15, 25, 26) on HOLIDAY PAGE

4-282

Teamster - Delivery of Concrete

03/01/2025

JOB DESCRIPTION Teamster - Delivery of Concrete

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:

Heavy Construction Work:

Shall Include the supply of Ready-Mix Concrete for construction, improvement and modification of all or any part of Streets, Highways, Bridges, Tunnels, Railroads, Canals, Dams, Airports, Schools & Power Generation Plants, where distance between project and asphalt plant is not more than 50 miles.

TRUCK DRIVER 07/01/2024

Concrete Delivery \$ 40.005

Light Construction Work:

Shall include the supply of Ready-Mix Concrete for construction of Single & Multi Family Homes, Town Houses, Apartment Buildings, including Driveways, Streets and Curbs within those projects. Parking Lots and Office Buildings, where distance between project and asphalt plant is not more than 50 miles.

TRUCK DRIVER
Concrete Delivery \$ 36.815

SUPPLEMENTAL BENEFITS

Per Hour:

Heavy Construction Work
Concrete Delivery \$ 45.475

Light Construction Work
Concrete Delivery \$ 15.355

OVERTIME PAY

NOTE: Heavy Construction:B2,I

Light Construction:B,E,P

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, *16, **25) on HOLIDAY PAGE

NOTE:(*16) Paid at Double if Worked. (**25) Paid at Double if Worked.

4-282ns

Teamster - Heavy&Highway

03/01/2025

JOB DESCRIPTION Teamster - Heavy&Highway

DISTRICT 4

ENTIRE COUNTIES

Nassau, Suffolk

WAGES

Per Hour:

Heavy Construction Work:

Shall include the construction, improvement or modification of all or any part of Streets, Highways, Bridges, Tunnels, Railroads, Canals, Dams, Airports, Schools, Power Generation Plants.

07/01/2024

Site Excavating
(Chauffeurs)

\$ 43.745

Light Construction Work:

Shall include the construction, improvement and modification of Single & Multi Family Homes, Town Houses, Apartment Buildings, including Driveways, Streets and Curbs within those projects. Parking Lots and Office Buildings.

Site Excavating
(Chauffeurs)

\$ 40.10

SHIFT WORK

PREMIUM PAY of 25% on straight time hours for NEW YORK STATE D.O.T. and or other GOVERNMENTAL MANDATED off shift work.

SUPPLEMENTAL BENEFITS

Per Hour:

Heavy Construction Work
Chauffeurs

\$ 55.6025

Light Construction Work
Chauffeurs

\$ 13.10

OVERTIME PAY

See (B, *B2, E, **I, P, ***R, ****U) on OVERTIME PAGE

Note: (B,E,P,T & *U) Apply to Heavy Construction.

Note: (B2,I,T & *U) Apply to Light Construction.

Note: (*U) Only applies after 8 hours work on holiday

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, *16, **25) on HOLIDAY PAGE

NOTE: (*16) Paid at Double if Worked. (**25) Paid at Double if Worked.

4-282

Welder

03/01/2025

JOB DESCRIPTION Welder

DISTRICT 1

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour

07/01/2024

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

- (AA) Time and one half of the hourly rate after 7 and one half hours per day
- (A) Time and one half of the hourly rate after 7 hours per day
- (B) Time and one half of the hourly rate after 8 hours per day
- (B1) Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday.
Double the hourly rate for all additional hours
- (B2) Time and one half of the hourly rate after 40 hours per week
- (B3) Time and one half of the hourly rate after 40 straight hours per week
- (C) Double the hourly rate after 7 hours per day
- (C1) Double the hourly rate after 7 and one half hours per day
- (D) Double the hourly rate after 8 hours per day
- (D1) Double the hourly rate after 9 hours per day
- (E) Time and one half of the hourly rate on Saturday
- (E1) Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
- (E2) Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- (E3) Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
- (E4) Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- (E5) Double time after 8 hours on Saturdays
- (F) Time and one half of the hourly rate on Saturday and Sunday
- (G) Time and one half of the hourly rate on Saturday and Holidays
- (H) Time and one half of the hourly rate on Saturday, Sunday, and Holidays
- (I) Time and one half of the hourly rate on Sunday
- (J) Time and one half of the hourly rate on Sunday and Holidays
- (K) Time and one half of the hourly rate on Holidays
- (L) Double the hourly rate on Saturday
- (M) Double the hourly rate on Saturday and Sunday
- (N) Double the hourly rate on Saturday and Holidays
- (O) Double the hourly rate on Saturday, Sunday, and Holidays
- (P) Double the hourly rate on Sunday
- (Q) Double the hourly rate on Sunday and Holidays
- (R) Double the hourly rate on Holidays

- (S) Two and one half times the hourly rate for Holidays
- (S1) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
- (T) Triple the hourly rate for Holidays
- (U) Four times the hourly rate for Holidays
- (V) Including benefits at SAME PREMIUM as shown for overtime
- (W) Time and one half for benefits on all overtime hours.
- (X) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

- (1) None
- (2) Labor Day
- (3) Memorial Day and Labor Day
- (4) Memorial Day and July 4th
- (5) Memorial Day, July 4th, and Labor Day
- (6) New Year's, Thanksgiving, and Christmas
- (7) Lincoln's Birthday, Washington's Birthday, and Veterans Day
- (8) Good Friday
- (9) Lincoln's Birthday
- (10) Washington's Birthday
- (11) Columbus Day
- (12) Election Day
- (13) Presidential Election Day
- (14) 1/2 Day on Presidential Election Day
- (15) Veterans Day
- (16) Day after Thanksgiving
- (17) July 4th
- (18) 1/2 Day before Christmas
- (19) 1/2 Day before New Years
- (20) Thanksgiving
- (21) New Year's Day
- (22) Christmas
- (23) Day before Christmas
- (24) Day before New Year's
- (25) Presidents' Day
- (26) Martin Luther King, Jr. Day
- (27) Memorial Day
- (28) Easter Sunday

(29) Juneteenth

New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12226

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

This Form Must Be Typed

Submitted By:

(Check Only One)

☐

Contracting Agency

☐

Architect or Engineering Firm

☐

Public Work District Office

Date:

A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone

Fax

E-Mail:

2. NY State Units (see Item 5).

☐ 01 DOT

☐ 02 OGS

☐ 03 Dormitory Authority

☐ 04 State University
Construction Fund

☐ 05 Mental Hygiene
Facilities Corp.

☐ 06 OTHER N.Y. STATE UNIT

☐ 07 City

☐ 08 Local School District

☐ 09 Special Local District, i.e.,
Fire, Sewer, Water District

☐ 10 Village

☐ 11 Town

☐ 12 County

☐ 13 Other Non-N.Y. State
(Describe)

3. SEND REPLY TO ☐ (check if new or change)
Name and complete address:

Telephone

Fax

E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR
THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title _____

Description of Work _____

Contract Identification Number _____

Note: For NYS units, the OSC Contract No. _____

6. Location of Project:

Location on Site _____

Route No/Street Address _____

Village or City _____

Town _____

County _____

7. Nature of Project - Check One:

☐

1. New Building

☐

2. Addition to Existing Structure

☐

3. Heavy and Highway Construction (New and Repair)

☐

4. New Sewer or Waterline

☐

5. Other New Construction (Explain)

☐

6. Other Reconstruction, Maintenance, Repair or Alteration

☐

7. Demolition

☐

8. Building Service Contract

8. OCCUPATION FOR PROJECT :

☐ Construction (Building, Heavy
Highway/Sewer/Water)

☐ Tunnel

☐ Residential

☐ Landscape Maintenance

☐ Elevator maintenance

☐ Exterminators, Fumigators

☐ Fire Safety Director, NYC Only

☐ Fuel Delivery

☐ Guards, Watchmen

☐ Janitors, Porters, Cleaners,
Elevator Operators

☐ Moving furniture and
equipment

☐ Trash and refuse removal

☐ Window cleaners

☐ Other (Describe)

9. Does this project comply with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

Signature



NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

**LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE
AWARDED ANY PUBLIC WORK CONTRACT**

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: <https://apps.labor.ny.gov/EDList/searchPage.do>

For inquiries please call 518-457-5589.

NYSDOL Bureau of Public Work Debarment List 03/14/2025

Article 8

AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****5754	0369 CONTRACTORS, LLC		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL	*****5784	A.J.M. TRUCKING, INC.		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	DOL		AKHLAQ OULAKH		4307 28TH AVE ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	NYC		ALL COUNTY SEWER & DRAIN, INC.		7 GREENFIELD DR WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL	*****8387	AMERICAN PAVING & MASONRY, CORP.		8 FOREST AVE GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL	*****8654	AMERICAN PAVING, INC.		8 FORREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	NYC		AMJED PARVEZ		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		ANGELO GARCIA		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL		ANGELO STANCO		8 FOREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL		ANGELO TONDO		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****4231	ANKER'S ELECTRIC SERVICE, INC.		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL		ANTHONY MONGELLI		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	NYC		ARADCO CONSTRUCTION CORP		115-46 132RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	NYC		AVM CONSTRUCTION CORP		117-72 123RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	NYC		AZIDABEGUM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****8421	B & B DRYWALL, INC		206 WARREN AVE APT 1WHITE PLAINS NY 10603	12/14/2021	12/14/2026
DOL	DOL		B&L RENOVATION CO.		618 OCEAN PARKWAY APT A6BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	NYC	*****2113	BHW CONTRACTING, INC.		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL	*****5078	BLACK RIVER TREE REMOVAL, LLC		29807 ANDREWS ROAD BLACK RIVER NY 13032	10/17/2023	10/17/2028
DOL	DOL		BRADLEY J SCHUKA		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****5161	CALADRI DEVELOPMENT CORP.		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****3391	CALI ENTERPRISES, INC.		1223 PARK STREET PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****4155	CASA BUILDERS, INC.	FRIEDLANDER CONSTRUCTI ON	64 N PUTT CONNERS ROAD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	AG	*****7247	CENTURY CONCRETE CORP		2375 RAYNOR ST RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****0026	CHANTICLEER CONSTRUCTION LLC		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	NYC	*****2117	CHARAN ELECTRICAL ENTERPRISES		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DOL		CHRISTOPHER GRECO		26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
DOL	DOL	*****2281	CORRAO TRUCKING, INC.		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
DOL	DOL		CRAIG JOHANSEN		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL	*****3228	CROSS-COUNTY LANDSCAPING AND TREE SERVICE, INC.	ROCKLAND TREE SERVICE	26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
DOL	DOL	*****7619	DANCO CONSTRUCTION UNLIMITED INC.		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL		DANIEL ROBERT MCNALLY		7 GREENFIELD DRIVE WARWICK NY 10990	03/25/2022	03/25/2027

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DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		DARWIN PEGUESE		6400 BALTIMORE NATIONAL SUITE 602CANTONSVILLE NY 21228	10/24/2024	10/24/2029
DOL	DOL		DAVID FRIEDLANDER		64 NORTH PUTT CORNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL		DINA TAYLOR		64 N PUTT CONNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	AG		EDWIN HUTZLER		23 NORTH HOWELLS RD BELLPORT NY 11713	08/04/2021	08/04/2026
DOL	DA		EDWIN HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	DOL		EMIL KISZKO		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION CORP.		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION LLC		4192 SIR ANDREW CIRCLE DOYLESTOWN PA 18902	07/18/2024	07/18/2029
DOL	DOL		EUGENIUSZ "GINO" KUCHAR		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DA		FREDERICK HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****2998	G.E.M. AMERICAN CONSTRUCTION CORP.		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	NYC		GAYATRI MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DA		GIOVANNA TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		GIOVANNI NAPOLITANO		2501 BAYVIEW AVENUE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DA	*****0213	GORILLA CONTRACTING GROUP, LLC		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DA	*****4760	GTX CONSTRUCTION ASSOCIATES, CORP		2501 BAYVIEW AVE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****2397	ISLAND BREEZE MARINE, INC.		6400 BALTIMORE NATIONAL CANTONSVILLE MD 21228	10/24/2024	10/24/2029
DOL	DOL	*****9211	J. WASE CONSTRUCTION CORP.		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		J.M.J CONSTRUCTION		151 OSTRANDER AVENUE SYRACUSE NY 13205	11/21/2022	11/21/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	12/12/2022	12/12/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JAMES J. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026

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DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	****7993	JBS DIRT, INC.		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	****2435	JEFFEL D. JOHNSON	JMJ7 AND SON	5553 CAIRNSTRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JEFFEL JOHNSON ELITE CARPENTER REMODEL AND CONSTRUCTION		C2 EVERGREEN CIRCLE LIVERPOOL NY 13090	11/21/2022	11/21/2027
DOL	DOL	****2435	JEFFREY M. JOHNSON	JMJ7 AND SON	5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JIM PLAUGHER		17613 SANTE FE LINE ROAD WAYNEFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL		JMJ7 & SON CONSTRUCTION, LLC		5553 CAIRNS TRAIL LIVERPOOL NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 AND SONS CONTRACTORS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS		7014 13TH AVENUE BROOKLYN NY 11228	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS AND SONS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS, LLC		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JOHN MARKOVIC		47 MANDON TERRACE HAWTHORN NJ 07506	03/29/2021	03/29/2026
DOL	DOL		JOHN WASE		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		JORGE RAMOS		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	DOL		JOSEPH K. SALERNO		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL		JOSEPH K. SALERNO II		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL	****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL	****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		JRN CONSTRUCTION CO, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DOL	****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL		KARIN MANGIN		796 PHELPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	DOL		KATE E. CONNOR		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KEAN INDUSTRIES, LLC		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL	****2959	KELC DEVELOPMENT, INC		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026

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DOL	DOL		KIMBERLY F. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		KMA GROUP II, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL	*****1833	KMA GROUP INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KMA INSULATION, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KRIN HEINEMANN		2345 ROUTE 52, SUITE 2N HOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	NYC		KULWANT S. DEOL		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	AG	*****3291	LINTECH ELECTRIC, INC.		3006 TILDEN AVE BROOKLYN NY 11226	02/16/2022	02/16/2027
DOL	DOL		LOUIS A. CALICCHIA		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****2196	MAINSTREAM SPECIALTIES, INC.		11 OLD TOWN RD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		MAQSOOD AHMAD		618 OCEAN PKWY BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	NYC		MUHAMMED A. HASHEM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****7790	NATIONAL BUILDING & RESTORATION CORP		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****1797	NATIONAL CONSTRUCTION SERVICES, INC		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	NYC		NAVIT SINGH		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		NELCO CONTRACTING, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DA		NICHOLAS T. ANALITIS		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTI ON, INC.	444 SCHANTZ ROAD ALLEN TOWN PA 18104	09/17/2020	09/17/2025
DOL	NYC	*****5643	NYC LINE CONTRACTORS, INC.		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PAULINE CHAHALES		935 S LAKE BLVD MAHOPAC NY 10541	03/02/2021	03/02/2026
DOL	DOL		PETER STEVENS		11 OLD TOWN ROAD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DOL		PETER STEVENS		8269 21ST ST BELLEROSE NY 11426	12/22/2022	12/22/2027

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DOL	DOL	****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	NYC		RASHEL CONSTRUCTION CORP		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	****2633	RAW POWER ELECTRIC CORP.		3 PARK CIRCLE MIDDLETOWN NY 10940	07/11/2022	07/11/2027
DOL	DA	****7559	REGAL CONTRACTING INC.		24 WOODBINE AVE NORTHPORT NY 11768	10/01/2020	10/01/2025
DOL	DOL		ROBBYE BISSESAR		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	07/11/2022	07/11/2027
DOL	DOL	****7172	RZ & AL INC.		198 RIDGE AVENUE VALLEY STREAM NY 11581	06/06/2022	06/06/2027
DOL	DOL		SAL FRESINA MASONRY CONTRACTORS, INC.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL		SAL MASONRY CONTRACTORS, INC.		(SEE COMMENTS) SYRACUSE NY 13202	07/16/2021	07/16/2026
DOL	DOL	****9874	SALFREE ENTERPRISES INC		P.O BOX 14 2821 GARDNER RDPOMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		SALVATORE A FRESINA A/K/A SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	DOL		SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	DA	****0476	SAMCO ELECTRIC CORP.		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		SILVANO TRAVAJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DOL	****0440	SOLAR GUYS INC.		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	NYC		SOMATIE RAMSUNAHAI		115-46 132ND ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	NYC	****3661	SPANIER BUILDING MAINTENANCE CORP		200 OAK DRIVE SYOSSET NY 11791	03/14/2022	03/14/2027
DOL	DOL		STANADOS KALOGELAS		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL	****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL	****9528	STEEL-IT, LLC.		17613 SANTE FE LINE ROAD WAYNESFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL	****3800	SUBURBAN RESTORATION CO. INC.		5-10 BANTA PLACE FAIR LAWN PLACE NJ 07410	03/29/2021	03/29/2026
DOL	DOL	****9150	SURGE INC.		8269 21ST STREET BELLEROSSE NY 11426	12/22/2022	12/22/2027
DOL	DOL		SYED MUHAMMAD S. JAFRI A/K/A SHARRUKH JAFRI		4307 28TH AVE ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		SYED RAZA		198 RIDGE AVENUE NY 11581	06/06/2022	06/06/2027
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	****9733	TERSAL CONSTRUCTION SERVICES INC		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13208	07/16/2021	07/16/2026
DOL	DOL		TERSAL CONTRACTORS, INC.		221 GARDNER RD P.O BOX 14POMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		TERSAL DEVELOPMENT CORP.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL	****5766	THE COKER CORPORATION	COKER CORPORATION	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	****2426	THE MATRUKH GROUP, INC.		4307 28TH AVE PO BOX 9082ASTORIA NY 11103	10/11/2024	10/11/2029
DOL	DOL		TIMOTHY PERCY		29807 ANDREWS ROAD BLACK RIVER NY 13612	10/17/2023	10/17/2028
DOL	DA	****1050	TRI STATE CONSTRUCTION OF NY CORP.		50-39 175TH PLACE FRESH MEADOWS NY 11365	03/28/2022	03/28/2027

NYSDOL Bureau of Public Work Debarment List 03/14/2025

Article 8

DOL	DA	****4106	TRIPLE H CONCRETE CORP		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	****8210	UPSTATE CONCRETE & MASONRY CONTRACTING CO INC		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	****6418	VALHALLA CONSTRUCTION, LLC.		796 PHLEPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	NYC	****2426	VICKRAM MANGRU	VICK CONSTRUCTI ON	21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	NYC		VICKRAM MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	DOL		VINCENT CORRAO		PO BOX 393 NANUET NY 10954	09/17/2024	09/17/2029
DOL	DOL	****8266	WILLIAM CHRIS MCCLENDON	MCCLENDON ASPHALT PAVING	1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM CHRIS MCCLENDON		1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM G. PROERFRIEDT		85 SPRUCEWOOD ROAD WEST BABYLON NY 11704	01/19/2021	01/19/2026
DOL	DOL	****5924	WILLIAM G. PROPHY, LLC	WGP CONTRACTIN G, INC.	54 PENTAQUIT AVE BAYSHORE NY 11706	01/19/2021	01/19/2026
DOL	DOL		WILLIAM SCRIVENS		4192 SIR ANDREW CIRCLE DOYELSTOWN PA 18902	07/18/2024	07/18/2029
DOL	DOL		XENOFON EFTHIMIADIS		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028

GENERAL CONDITIONS
of the
CONTRACT for CONSTRUCTION

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GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

The within document includes detailed provisions concerning the capital improvement work to be performed by the Contractors engaged by the Owner. This document contains provisions which relate particularly to capital improvement projects in the school district setting in New York State. The document is incorporated by reference into all contracts to be awarded and should be reviewed carefully by the Contractor and SubContractors to whom the award of contract is made. Consultation with an attorney and insurance representative is advised.

ARTICLE 1 DEFINITIONS

- A. "Addendum" or "Addenda" refers to revised Drawings and/or written requirements for the capital improvement work issued by the Architect prior to the time indicated for submission of a bid by a contractor.
- B. The "Architect" is the design professional engaged by the School District respecting the capital improvement projects to be performed in the School District.
- C. "Board" refers to the Board of the School District.
- D. "Central Administration" refers to the Superintendent of Schools or designee.
- E. The "Contract Documents" are the Agreement between the Owner and the Contractor, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, and Addenda which have been issued.
- F. The "Contractor" refers to the entity engaged by the School District to perform all or a part of the capital improvement project on its behalf.
- G. Where a contractor other than the General Contractor is the only contractor engaged to perform work, the responsibilities allocated to the General Contractor in these General Conditions shall be performed by such other contractor.
- H. The "Drawings" are the plans, elevations, sections, details, schedules, and diagrams developed by the Architect for the capital improvement projects to be performed in accordance with the Project manual of which these General Conditions of the Contract for Construction ("General Conditions") form a part.
- I. The "Project" refers to the entire capital improvement project to be performed in accordance with the Project Manual.
- J. The "Project Manual" is the document which is issued simultaneously with the Drawings and includes the Notice to Bidders, Information to Bidders, Bid Proposal Form, Prevailing Wage

Rate schedule and the written requirements for labor, materials, equipment, construction systems and the like necessary for the Contractor to complete the capital improvement work for which it has been engaged.

K. The "Owner" refers to the School District, the Board of Education, its officers, agents, and employees.

L. A "SubContractor" is a person or entity who has a direct contract with the Contractor to provide material and/or labor for the Project on or off the site, or to otherwise furnish labor, material or other services with respect to a portion of the Contractor's work. A "Sub-SubContractor" is a person or entity who has a direct or indirect contract with a SubContractor engaged by the Contractor to perform a portion of the SubContractor's work at the site, or to otherwise furnish labor, material, or other services with respect to a portion of the SubContractor's work.

M. Accepted," "directed," "permitted," "requested," "required," and "selected" mean, unless otherwise explained, "accepted by the Architect and/or the Owner" "directed by the Architect and/or the Owner," "permitted by the Architect and/or the Owner," "requested by the Architect and/or the Owner," "required by the Architect and/or the Owner," and "selected by the Architect and/or the Owner." However, no such implied meaning will be interpreted to extend the Architect's or the Owner's responsibility into the Contractor's area of construction supervision.

N. "As accepted" "or acceptable substitute," and "for review" mean the Architect is the sole judge of the quality and suitability of the proposed substitutions. Where used in conjunction with the Architect's response to submittals, requests, applications, inquiries, reports, and claims by the Contractor, the meaning will be held to the limitations of the Architect's responsibilities and duties as stated in the General Conditions. In no case will "accepted by the Architect" be interpreted as an assurance to the Contractor that the requirements of the Contract Documents have been fulfilled.

O. "Furnish" means: (1) supply and deliver to the Project or other designated location, ready for unloading, unpacking, storing, assembly, installation, application, erection, or other form of incorporation into the Project, and ready for use; and (2) supply and deliver products requiring additional or supplemental fitting, assembly, fabrication, or incorporation into other elements of the Project directly to the fabricator, installer, or manufacturer as required.

P. "Install" means unload, unpack, use, fit, attach, assemble, apply, place, anchor, erect, finish, cure, protect, clean, and similar operations required to properly incorporate work into the Project.

Q. "Provide" means furnish and install.

R. "Replace" means remove designated, damaged, rejected, defective, unacceptable, or non-conforming work from the Project and provide new work meeting the requirements of the Contract Documents in place thereof.

S. The word "include," in any form other than "inclusive," is non-limiting and is not intended to mean all-inclusive.

ARTICLE 2 CONTRACTOR'S REPRESENTATIONS

A. Upon submission of its bid to the Owner, the Contractor expressly represents:

1. The Contractor represents and warrants that it performed a detailed investigation of the site(s) and that such investigation was sufficient to disclose the conditions of the site(s) at which work is to be performed by it and all improvements thereon, and the conditions under which the work is to be performed, including, but not limited to (a) the location, condition, layout and nature of the Project and surrounding areas; (b) the cost of labor, materials and equipment necessary to perform the work, the availability; (c) the areas of the work which will cause a disruption to the necessary and proper operation of the facilities by the Owner; and (d) other pertinent limitations on the performance of its work.

2. The Contractor represents and warrants that it has carefully studied and compared the Drawings and pertinent provisions of the Project Manual and that any errors, omissions, ambiguities, discrepancies, or conflicts found in said documents have been brought to the attention of the Architect for clarification prior to the Contractor's submission of its bid. If, in the interpretation of Contract Documents, requirements within the Drawings and Specifications conflict, or it appears that the Drawings and Specifications are not in the Agreement, the requirement to be followed shall be decided by the Architect. Where there is a discrepancy in quantity, the Contractor shall provide the greater quantity; where there is a discrepancy in quality, the Contractor shall provide the superior quality. Addenda supersede the provisions that they amend.

3. Each contractor certifies that it is experienced and familiar with the requirements and conditions imposed during the construction of similar work in the area. This includes, but is not limited to, "out of sequence" or "come back" work for the removal of plant, equipment, temporary wiring, or plumbing, etc. This "out of sequence" work may also include phasing of construction activities to accommodate the installation of the work at various locations and orderly fashion and the completion of work at various locations and/or levels at various times. This "phasing," "out of sequence," or "come back" work shall be done at no cost to other contractors, the Owner, or the Architect.

B. The Contractor warrants to the Owner that: (1) the materials and equipment furnished under its contract will be of good quality and new, and of recent manufacture, unless otherwise required or permitted by the Contract Documents; (2) that its work will be free from defects not

inherent in the quality required or permitted; and (3) that its work will conform with the terms and conditions of the Agreement with the Owner. Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective and shall be removed and replaced at the Contractor's cost and expense. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

C. Except as to any reported errors, inconsistencies, or omissions, and to concealed or unknown conditions, by executing the Agreement, the Contractor represents the following:

1. The Drawings and the Specifications found in the Project Manual issued simultaneously with said Drawings are sufficiently complete and detailed for the Contractor to: (a) perform the work required to produce the results intended by the Owner; and (b) comply with all the requirements of its contract with the Owner.

2. The work required to be performed by the Contractor including, without limitation, all construction details, construction means, methods, procedures and techniques necessary to perform its work, use of materials, selection of equipment and requirements of product manufacturers are consistent with: (a) good and prevailing and accepted industry standards applicable to its work; (b) requirements of any warranties applicable to its work; and (c) all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies which bear upon the Contractor's performance of its work.

3. The Drawings and the Specifications for the Contract have been prepared with care and are intended to show as clearly as is practicable the work required to be done. Work under all items in the Contract Documents must be carried out to meet field conditions to the satisfaction of the Architect and the Owner and in accordance with his instructions and the Drawings and the Specifications.

4. All dimensions shown on the Drawings are for bidding purposes only. It is the responsibility of the Contractor to verify all dimensions in the field to ensure proper and accurate fit of materials and items to be installed.

D. The representations set forth herein shall survive expiration and/or termination of the Contractor's Agreement with the Owner.

ARTICLE 3 CONTRACTOR'S CONSTRUCTION PROCEDURES

A.

1. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures required for the proper execution of its work on the Project. Where the Drawings, the Specifications, and/or the Project Manual make reference to particular construction means, methods, techniques, sequences or procedures or

indicate or imply that such are to be used in connection with the Contractor's work, such reference is intended only to indicate that the Contractor's work is to produce at least the quality of the work implied by the operations described, but the actual determination as to whether or not the described operations may be safely or suitably employed in the performance of the Contractor's work shall be the sole responsibility of the Contractor. All loss, damage, liability, or cost of correcting defective work arising from the employment of a specific construction means, method, technique, sequence, or procedure shall be borne solely by the Contractor.

2. Neither the Architect or the Owner will have control over or charge of and will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility as provided herein.

3. The Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, rigging, water, heat, utilities, light, transportation, and other facilities and services necessary for proper execution and completion of its work, whether temporary or permanent and whether or not incorporated or to be incorporated in its work.

B. The Contractor shall be responsible for coordinating the work of its own forces and the work of SubContractors engaged by it to perform the work of the Project on its behalf. The Contractor shall supply to its own work forces, and SubContractors engaged by it to perform portions of its work, copies of the Drawings, the Specifications, and the Project Manual for the work to be performed by such individuals/entities on its behalf. The Contractor shall review any specified or installation procedure with its employees and/or SubContractors, including those recommended by any product manufacturer, prior to the commencement of the relevant portion of the work to be performed. The Contractor shall be responsible to the Owner for the acts and/or omissions of the Contractor's employees, the Contractor's SubContractors, the Contractor's material suppliers, and/or their respective agents and employees, and any other persons performing portions of the work on behalf of the Contractor.

C. The Contractor shall be responsible for the inspection of portions of the Project performed by its own work force and/or SubContractors engaged by it for the purpose of determining that said work is in proper condition to receive subsequent work.

D. The Contractor shall perform its work in accordance with the standards of the construction industry applicable to work in the locale in which work is to be performed.

E. The Contractor shall only employ labor on the Project or in connection with its work capable of working harmoniously with all trades, crafts and any other individuals associated with the capital improvement work to be performed. There shall be no strikes, picketing, work stoppages, slowdowns, or other disruptive activity at the Project for any reason by anyone employed or engaged by the Contractor to perform its portion of the work. There shall be no lockout at the Project by the Contractor. The Contractor shall be responsible for providing the manpower required to proceed with the work under any circumstance. Should it become

necessary to create and maintain a separate entrance for a contractor involved in a labor dispute, all costs associated with creating and maintaining that entrance shall be borne by the contractor involved in the dispute. Such costs shall include, but not be limited to, signage, fencing, temporary roads, and security personnel as deemed necessary by the Owner for the safety of the occupants of the site.

F.

1. If the Contractor has engaged the services of workers and/or SubContractors who are members of trade unions, the Contractor shall make all necessary arrangements to reconcile, without delay, damage, or cost to the Owner and without recourse to the Architect or the Owner, any conflict between its Agreement with the Owner and any agreements or regulations of any kind at any time in force among members or councils which regulate or distinguish what activities shall not be included in the work of any particular trade.

2. In case the progress of the capital improvement work to be performed by the Contractor is effected by any undue delay in furnishing or installing any items or materials or equipment required pursuant to its Agreement with the Owner because of a conflict involving any such labor agreement or regulation, the Owner may require that other material or equipment of equal kind and quality be provided pursuant to a Change Order or Construction Change Directive but in no case shall the amount of such change be charged by the Contractor to the Owner as an additional cost to perform the capital improvement work pursuant to its contract.

3. The Contractor shall ensure that its work continues uninterrupted during the pendency of a labor dispute.

4. The Contractor shall be liable to the Owner for all damages suffered by the Owner occurring as a result of work stoppages, slowdowns, disputes, or strikes.

G. The Contractor shall enforce strict discipline and good order among the Contractor's employees and its SubContractors' work forces and other persons carrying out the performance of its work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. The Owner reserves the right to object to any person to be hired or who is employed by the Contractor. Upon the request of the Owner, said person shall be removed from the Project and not again be assigned to perform the Contractor's work without the prior written permission of the Owner.

H. Within one (1) week after receiving notice of its award of the Contract, the Contractor shall employ a competent, full-time Project Manager and On Site Superintendent to be approved by the Owner or its representative, and such necessary assistants who shall be in attendance at each Project site whenever and wherever work is in progress to provide for the expeditious completion of the work. Said Project Manager and On Site Superintendent shall be employed until punch list and closeout of the Project. To the extent work is being performed contemporaneously at different facilities within the School District, the Contractor shall assign different superintendents for each facility at which work is being performed. The Project Manager and On Site Superintendent

assigned by the Contractor shall not be changed except with the prior written consent of the Owner, unless the Project Manager or On Site superintendent or such assistant proves to be unsatisfactory to the Contractor and/or ceases to be in its employ. The Project Manager and On Site Superintendent shall represent the Contractor, and communications given to the Project Manager or On Site Superintendent, whether verbal or written, shall be as binding as if given to the Contractor. Oral communications to the Superintendent(s) or his/her assistant(s) and/or Project Manager shall be confirmed in writing by the Owner or the Architect. The Contractor shall forward to the Owner a copy of the resumes for each of its superintendents, Project Managers, and their assistants. The Owner or the Architect shall have the right to have any supervisory or management staff removed from the Project with or without cause.

I. Each Contractor shall provide, or otherwise see that, the Project Manager, or On Site Superintendent Site Managers, and/or responsible workers of each contractor and major subcontractor are equipped with cellular phones and radios. Each contractor shall provide the Owner and the Architect with the cellular telephone number for each phone and worker.

J. The Contractor's supervisory personnel, including superintendents and their assistants, shall be versed in the English language. In the event the Contractor's supervisory personnel, the superintendents, Project Managers, and/or their assistants are not versed in the English language, the Contractor shall employ the services of a full-time on-site interpreter to facilitate communications with such supervisory personnel, superintendents and/or assistants.

K. Prior to the commencement of work, the Contractor shall provide the Owner and the Architect with:

1. a written list of the names, addresses and telephone numbers of the members of its organization who can be contacted in the event of an off-hours emergency at the building site, including cellular telephone numbers and personal/home telephone numbers.

2. a written list of SubContractors, Sub-SubContractors, suppliers and vendors with names, addresses, telephone numbers, and descriptions of the work they shall perform or furnish.

3. The name, address and telephone number of the bonding company, banking, and insurance company for the Prime Contractor including the name, address, and telephone number of each bonding company's primary contact representative for the Project.

4. Detailed subcontractor schedules indicating the approximate quantity of shop drawings, sequence, timing, and man loading.

5. A cash flow projection for the life of the Project, including a schedule and graph showing the amount of work projected to be completed each month or billing period and a dollar value for the anticipated billings each month or billing period. This shall be completed after an agreed upon schedule of values has been approved by the Architect and the Owner.

L.

1. Tests, inspections, and approvals of portions of the Contractor's work required by the Drawings and/or the Specifications shall be made at an appropriate time. Unless otherwise provided, the Contractor shall consult with the Architect and the Owner concerning the need for testing and/or inspection of its work pursuant to the Contract Documents and, after consulting with the Architect and the Owner, the Architect shall advise the Owner to make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority. The Owner shall bear all costs associated with the tests, inspections or approvals required by the Drawings and/or the Specifications, except as set forth in subparagraph 3 hereof.

2. Tests, inspections, and approval of portions of the Contractor's work required by all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies of public authorities or governmental agencies having jurisdiction shall be made at an appropriate time. The Contractor shall consult with the Architect and the Owner concerning the need for testing and/or inspection of its work pursuant to law, ordinance, regulation, or orders of public authorities or governmental agencies and shall advise the Owner in writing that it has made arrangements for such tests, inspections and approvals with the appropriate public authority or governmental agency. The Contractor shall be solely responsible for making timely notice of the need for a test, inspection and/or approval with the relevant public authority or governmental agencies and shall bear all costs associated with such testing, inspection, or approval required by such public authority or governmental agency.

3. If the Architect, the Owner, or public authorities or governmental agencies having jurisdiction determine that portions of the Contractor's work require additional testing, inspection or approval due to the Contractor's failure to perform its work in accordance with the requirements of the Contract Documents and/or all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies of public authorities or governmental agencies having jurisdiction, the Architect will advise the Owner of the need for such additional inspections or tests and the Owner shall make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner. The Contractor shall bear the costs of such additional testing as provided in Article 14(B).

M. The Contractor shall, if required by all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies of public authorities or governmental agencies having jurisdiction over the Project, retain a licensed professional engineer to supervise the construction of the Project including, but not limited to, foundations, structural work, soils, welding, reinforced masonry, and the like.

N. The Contractor recognizes and acknowledges that the Project is governed by and subject to the provisions of New York State General Municipal Law, section 101, governing the award of contracts on public improvement projects. As such, the Contractor recognizes and acknowledges that other contractors will be performing work on the Project in conjunction with it. As such, the

Contractor agrees to cooperate with such other contractors performing work on the Project and shall perform its work as follows:

1. The Contractor shall not interfere with the erection, installation, or storage upon the premises of any work, materials, supplies, or equipment which is to be performed and furnished by other contractors, and the Contractor shall properly connect and coordinate its work therewith.

2. The Contractor shall not commit or permit any act which will interfere with the performance of the work of any other Contractor performing work on the Project. If the Contractor sustains any damage through any act or omission of other contractors having a contract with the Owner for the performance of work upon the site or of work which may be necessary to be performed for the proper execution of the work to be performed hereunder, or through any act or omission of a SubContractor of such contractor, the Contractor shall promptly notify the Owner and the Architect of such damage.

3. When the work of the Contractor or its SubContractors overlap or dovetail with that of other contractors, materials shall be delivered and operations conducted to carry on the work continuously, in an efficient, workmanlike manner.

4. In case of interference between the operations of different contractors, the Architect will be the sole judge of the rights of each contractor and shall have the authority to decide in what manner the work may proceed, and in all cases its decision shall be final. Any decision as to the method and times of conducting the work or the use of space as required in this paragraph shall not be basis of any claim for delay or damages by the Contractor.

5. The Contractor, including its SubContractors, shall keep itself informed of the progress of other contractors and shall notify the Architect or the Owner immediately in writing of lack of progress on the part of other contractors where such delay will interfere with its own operations. Failure of the Contractor to keep informed of the work progressing on the Project and failure to give notice of lack of progress by others shall be construed as acceptance by the Contractor of the status of the work as being satisfactory for proper coordination with the Contractor's own work.

6. Delays or oversights on the part of any contractor or subcontractor in getting any or all of their work done in the proper way, thereby causing cutting, removing, and replacing work already in place, shall not be the basis for a claim for extra compensation.

7. If part of the Contractor's work depends upon construction or operations by the Owner or another contractor, the Contractor shall, prior to proceeding with that portion of its work, promptly report to the Architect and the Owner apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or other

contractor's completed or partially completed construction is fit and proper to receive the Contractor's work.

8. The Contractor shall promptly correct discrepancies or defects in its work which have been identified by other contractors as affecting proper execution and results of the work of such other contractor.

O.

1. The Contractor shall comply with and give notices required by all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies of public authorities or governmental agencies bearing on performance of the Work. If the Contractor fails to give such notices, it shall be liable for and shall defend, indemnify, and hold harmless: (a) the Owner, its consultants, employees, members of the Board, officers, and agents; and/or (b) the Architect and its consultants, employees, officers, and agents from and against any resulting fines, penalties, judgments, or damages, including reasonable attorney's fees, imposed on or incurred by the parties indemnified hereunder. The Contractor shall pay any costs or fees incurred in such compliance and any fines or penalties imposed for violation thereof and any costs or fees incurred by the Owner due to such violation.

2. The Contractor shall pay any costs or fees incurred in such compliance and any fines or penalties imposed for violation thereof and any costs or fees incurred by the Owner due to such violation. If the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Architect and the Owner in writing, and necessary changes shall be accomplished by appropriate modification to the Drawings and/or the Specifications.

3. If the Contractor performs Work knowing it to be contrary to all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies of public authorities or governmental agencies without such notice to the Architect and the Owner, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs and shall bear the total cost for correction of same.

P. The Contractor recognizes and acknowledges that job meetings will be held at the job site as designated by the Owner or the Architect, unless otherwise designated by the Owner or the Architect. The Contractor shall have responsible representation at the MANDATORY weekly job meetings held at the location designated by the Owner. These meetings will be held to arrange for satisfactory coordination of all trades on the Project so as not to impede job progress. Contractors or SubContractors failing to attend job meetings shall be responsible for delays and/or expenses incurred due to coordination difficulty.

Q. The Contractor shall provide copies of its daily construction reports to the Owner's designated representative. These reports shall be submitted no later than 10:00 am the following workday. The daily reports shall provide detailed information concerning the Contractor's activities and operations, including work activities on site and manpower. A "Daily

Construction" form shall be used for reporting these activities. In addition, the Contractor is required to submit a Two Week Look Ahead schedule for upcoming work.

ARTICLE 4 CONTRACTOR'S USE OF SITE

A. The Contractor shall confine operations at the site to the areas at which construction is to be performed and to such areas permitted by law, ordinances, permits and as set forth in detail in the Project Manual and the Drawings, the Specifications, and the Project Manual.

B. Five (5) days after receipt of the Notice to Proceed, the Contractor shall provide two (2) copies of a videotaped recording of all existing conditions to the Owner and the Architect. This taping shall provide a record of all existing buildings, grounds, exterior conditions, and interior conditions. The Contractor shall schedule a representative of both the Owner and the Architect to be present at this taping. In the absence of this record, the Contractor shall be responsible for paying the costs associated with any and all repairs in an area where the Contractor is working or has worked, as may be deemed necessary by the Owner or the Architect.

C. The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy.

D. General Safety and Security Standards for Construction Projects:

1. All construction materials shall be stored in a safe and secure manner.
2. Fences around construction supplies or debris shall be maintained.
3. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.
4. During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.
5. The Contractor shall exert utmost care and diligence when working in or near any existing buildings or sitework. The absence of protection around such items shall not excuse the Contractor from its liability to provide protection. Any damage to existing buildings, sitework, or facilities shall be repaired and charged to the Contractor responsible for the damage.
6. The Contractor shall be responsible for the removal and replacement of existing ceiling tiles and grid in areas of the existing building where its work is required, and new ceilings are not scheduled for installation. In the event that the existing ceilings are damaged and cannot be replaced to the satisfaction of the Owner, the responsible contractor shall be liable for the costs of replacing in kind, the existing ceilings with new tile and grid.

7. All disconnect and/or tie-in work involving any utilities that would interfere with the ongoing operations of the Owner shall be completed after hours when the facility is not in use. The performance of this work shall be projected on all schedules required to be prepared by the Contractor. Additionally, the Contractor shall give the Architect and the Owner at least forty-eight (48) hours advance written notice of its intention to perform this type of work. All overtime and standby personnel necessary to complete these tie-ins shall be the responsibility of the Contractor performing the work.

E.

1. Separation of construction areas from occupied spaces: Construction areas which are under the control of a contractor and therefore not occupied by district staff or students shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. Heavy duty plastic sheeting may be used only for a vapor, fine dust, or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas. Methods of dust and fume control shall include, but not be limited to:

- a. adequate ventilation;
- b. wetting down;
- c. keeping bags of insulating materials, cement, etc., closed and sealed;
- d. controlled mixing of materials under field conditions;
- e. special attention should be utilized in sawing of insulation and certain acoustical materials and storage of materials;
- f. job housekeeping must be maintained; and
- g. advising all personnel of hazardous conditions, including supervisors and workers.

Each contractor is responsible for instituting the above policies to ensure minimal impact to surrounding occupied areas.

2. A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs, or elevators designated for students or school staff.

3. Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.

4. All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety, and educational capabilities at all times that classes are in session.

F.

1. Storage space will be allotted to the Contractor by the Owner to the extent such space, in the sole discretion of the Owner, is available. The Contractor shall be responsible for securing appropriate space for its material with the Owner and the Architect prior to delivery. If insufficient space is available on the site, the Contractor shall provide local off-site storage, storage containers, etc. at its own cost and expense. Should any of the material stored on-site obstruct the progress of any portion of the work or the Project, this material shall be removed by the Contractor without reimbursement of cost, from place to place or from the premises, as the Owner or the Architect may direct.

2. The Contractor shall schedule delivery of materials and equipment to minimize long term storage at the Project, to prevent overcrowding of construction spaces, and to ensure that under no circumstances will materials that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses be stored on site.

3. The Contractor shall deliver materials and equipment to the Project in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installation. The Contractor shall inspect materials and equipment upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected. The Contractor shall store products to allow for inspection and measurement of quantity or counting of units. The Contractor shall store materials in a manner that will not endanger the project structure. The Contractor shall store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation. The Contractor shall comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.

4. The Contractor shall not unreasonably encumber the site with materials or equipment during the performance of its work. Only materials and equipment which are to be used directly in the performance of the Contractor's work shall be brought to and stored on the premises of the School District. After equipment is no longer required for its work, the Contractor shall promptly remove such equipment from the premises of the School District. The Contractor shall be solely responsible for the protection of construction materials and equipment stored on the premises from weather, theft, damage, and all other adversity. The Contractor shall at all

times provide the proper housekeeping to minimize potential fire hazards and shall provide approved spark arresters on all steam engines, internal combustion engines and flues.

5. A construction entrance will be designated for deliveries. A separate entrance will be established for entering and exiting the site only. All deliveries shall be scheduled and coordinated with the Architect and the Owner. Unexpected or uncoordinated deliveries may be turned away by the Owner or the Architect at the discretion or necessity of the Owner. The Owner's enforcement of this provision shall not be construed by any contractor or subcontractor as the basis for a claim of delay in time or monetary damages alleged to have been incurred as a result of refusal of delivery.

6. The Contractor for General Construction shall provide necessary and required security measures to adequately safeguard the construction site from vandalism and intrusion of unauthorized persons. The Contractor for General Construction shall submit its means and methods of security to the Architect and the Owner for review and comment. The Project must be secured twenty-four (24) hours a day, seven (7) days a week including holidays. The General Construction Contractor's failure to secure the site as required by this paragraph will result in the Owner engaging the services of such necessary personnel so as to provide such security. No notice will be given the Contractor for General Construction of the Owner's intention to engage such security services and all costs and expenses associated with the Owner's security of the site in this regard will be back charged to the Contractor for General Construction. While the Owner may have security guards patrolling the Project, the function of such security guards is not for the purpose of specifically guarding the Contractor's property or operations of work.

G. The Contractor's right to entry and use of the School District premises arises solely from the permission granted by the Owner pursuant to the Agreement between the Contractor and the Owner. This permission shall be deemed to be withdrawn upon the termination of the Contractor's Agreement with the Owner.

H.

1. The Contractor shall be required to perform its work with no interruption to the School District's operations, including its administrative and business operations. Any work which will interfere with the School District's operations and/or which is to be performed when the School District's facilities are in operation shall be performed on evenings and weekends. Additionally, the Contractor shall conduct its work in compliance with federal, state, county, or local ordinances. All costs incurred by the Owner to make the facilities available during evening and weekends shall be borne by the Contractor. The Owner reserves the right to determine what work will "interfere" with its operations and said determination shall be final.

2. The Contractor may request access to the site during times beyond the work hours permitted. Approval is solely at the discretion of the Owner. If approval is given, the Contractor is responsible for paying all additional costs incurred by the Owner and the Architect for providing the site to the Contractor during the additional time periods.

3. In the event the Contractor fails to complete all work under the Contract Documents by said scheduled dates, the Contractor will not be permitted to perform any work during normal school hours. Such work shall only be performed after school hours, Saturdays, Sundays, holidays, or periods when school is unoccupied at no additional cost of any kind to the Owner. In addition to damages incurred by the Owner in connection with the Contractor's delay, the Contractor shall be liable for all costs incurred by the Owner to provide staff and the Architect's and the Owner's personnel as required to make facility accessible by the Contractor and perform inspections during such off hours.

4. The Owner shall not be responsible for any overtime charges incurred by the Contractor during the course of the Project. Any and all costs associated with work which is performed at hours requiring the payment of such overtime by the Contractor to its workers shall be the Contractor's responsibility.

I. Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected building spaces are not occupied or acoustical abatement measures shall be taken.

J. The Contractor shall provide all required temporary access walkways, both interior and exterior, and the like necessary to complete its work. The Contractor shall maintain an unobstructed condition at all entrances and/or exits from present buildings. No equipment, other than equipment with rubber tires, will be allowed on any existing or new pavement, UNLESS THE CONTRACTOR HAS OBTAINED THE PRIOR WRITTEN APPROVAL OF THE OWNER AND THE PAVEMENT HAS BEEN FIRST PROTECTED WITH PLANKING OR BY OTHER MEANS APPROVED BY THE ARCHITECT AND THE OWNER.

K. The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the premises of the School District without the prior written consent of the Owner, which consent may be withheld at the sole discretion of the Owner.

L.

1. Without the prior approval of the Owner, the Contractor shall not permit any workers to use any existing School District facilities, including, without limitation, lavatories, toilets, entrances, and parking areas other than those designated by the Owner. Employees, vehicles, and equipment of the Contractor and of all others engaged by the Contractor for the performance of its work shall enter onto the premises of the School District for which construction work is to be performed only at those locations designated or approved by the Owner. The parking for construction personnel shall be limited to the designated trailer park area only. Failure to abide by this rule will result in towing of cars at the expense of the Contractor who employs the individual.

2. The Contractor shall ensure that its work, at all times, is performed in a manner that affords reasonable access to both vehicles and individuals, to the premises of the School District and all adjacent areas. The Contractors' work shall be performed, to the fullest extent

possible, in such a manner that areas in and around the construction area shall be free from all debris, building materials, and equipment likely to cause hazardous conditions, and do not close or obstruct walkways, roadways, pathways, or other occupied facilities or facilities to be used by the Owner. Without limitation to any other provision of the Agreement between the Contractor and the Owner, the Contractor shall use its best efforts to minimize any interference with the occupancy of areas, buildings, entrances, and parking areas in and around the premises at which work is being performed. Free access to fire hydrants and standpipe connections shall be maintained at all times during construction operations, and portable fire extinguishers shall be provided by the Contractor and made conveniently available throughout the construction site.

3. The Owner, in conjunction with the Architect, shall designate locations at the site at which the Contractor, its SubContractors and employees may utilize in connection with its work. The Contractor's employees and the employees of the Contractor's SubContractors and others engaged by the Contractor to perform its work are prohibited from trespassing or leaving any vehicle on any property not assigned by the Owner as set aside for the use of the Contractor. The Contractor's employees and the employees of the Contractor's SubContractors and others engaged by the Contractor to perform its work are restricted to the immediate area at which work is to be performed. Only persons having official business will be admitted to the construction site. NO COMMUNICATION BETWEEN THE CONTRACTOR, ITS EMPLOYEES, SUBCONTRACTORS' EMPLOYEES, OR OTHERS ENGAGED BY THE CONTRACTOR FOR THE PERFORMANCE OF ITS WORK AND STUDENTS OR STAFF WILL BE PERMITTED.

4. The Contractor, its SubContractors, their respective employees or agents, and all others engaged by the Contractor in connection with the performance of its work are required to wear photographic identification badges at all times. The Contractor shall provide such individuals with said photographic identification badges. These badges shall be worn so as to be readily and easily visible. All workers and representatives of the Contractor, its SubContractors, or suppliers shall wear these badges while on school property. The information on these badges shall be as prescribed by the Owner. Each person seen without a photo identification badge (or otherwise failing to comply with this requirement in the opinion of the Owner) shall be ordered to leave school property. No warnings shall be necessary. The Contractor(s) and their SubContractor(s) employing the offending person(s) shall be solely responsible for making-up and paying for any loss of production or required progress in the Work resulting from this action (including any claims by other Contractors dependent on the work of this Contractor). All parties agree that any action taken to enforce this requirement shall not be construed by any Contractor or its SubContractors or suppliers as the basis for a claim (for either time or money) for delay to the Work or to the Contractor, its SubContractors, or Suppliers.

5. Without limitation of any other provision of the Agreement between the Owner and Contractor, the Contractor shall use its best efforts to comply with all rules, regulations, and policies promulgated by the Owner in connection with the use and occupancy of the premises of the School District. The Contractor shall immediately notify the Owner in writing if during the performance of its work, the Contractor finds compliance with any portion of such rules, regulations, and policies to be impracticable, setting forth the problems of such compliance and

suggesting alternative through which the same results intended by such portion of the rules, regulations, and policies can be achieved. The Owner may, in the Owner's sole discretion, adopt such suggestions, develop new alternatives, or require compliance with the existing requirements of the rules, regulations, and policies.

M. No drinking of alcoholic beverages, smoking, or use of cannabis, cannabinoid hemp, personal vaporizing devices, or controlled substances is permitted on the grounds. The Contractor shall ensure that none of its or its SubContractors, their respective employees, agents, and/or consultants report to the site impaired by alcohol, cannabis/cannabinoid hemp, or controlled substances. The Contractor bears the responsibility of determining if its, or its SubContractors' employees are in any way impaired and whether the safety of the public, the employees of other Contractors and their SubContractors, the Owner, or the Architect are jeopardized. Each contractor shall provide drinking water for its own employees.

N. The Contractor's employees, representatives, agents, and consultants, and all of its SubContractors' employees, representatives, agents, and consultants at the site are to refrain from using indecent language. All doing so will be removed from the site. Artwork or decoration found on vehicles belonging to the Contractor or the SubContractors' employees parked on or near the school property which contain indecent language or pictures shall either be covered or removed from the location.

O. The Contractor's employees, representative, agents, and consultants, and all of its SubContractors' employees, representatives, agents, and consultants at the site are to wear shirts, long pants, and proper footwear.

P. Each contractor shall keep the premises and surrounding area in which it is working free from accumulation of waste materials or rubbish caused by the performance of all of the work being performed on-site and in the buildings. On a daily basis at the conclusion of work on the Project, each contractor shall clean the areas in which it has performed work and shall remove all waste, materials, rubbish, its tools, construction equipment, machinery, and surplus materials. Each contractor shall broom sweep all construction areas in which it has performed worked every day. The Owner shall perform an inspection each afternoon to determine that the work areas of the Contractors have been properly cleaned. In the event the work areas are not cleaned, the Owner shall advise the offending contractor to provide cleaning as required herein. If any Contractor fails to keep the site safe and clean within four (4) hours of being notified by the Owner, either verbally or in writing, the Owner will have the clean-up work performed and back charged to the offending contractor without further notification to the Contractor. The cost of such cleaning company, together with the cost of any custodial costs of the School District, at prevailing overtime rates plus fifteen percent (15%) will be charged to the offending Contractor. Notice to field personnel shall be deemed notice to the Contractor.

Q. The Contractor shall provide ventilation of enclosed areas during construction as may be required to permit proper curing and drying out and to prevent excessive humidity, moisture,

and condensation. Ventilation shall be by natural or artificial means as required by conditions involved.

R. The Contractor shall be responsible for the control of chemical fumes, gases, and other contaminants produced by welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure that they do not enter occupied portions of the building or air intakes.

S. The Contractor shall be responsible for ensuring that activities and materials which result in "off-gassing" of volatile organic compounds such as glues, paints, furniture, carpeting, wall covering, drapery, etc. are scheduled, cured, or ventilated in accordance with manufacturers' recommendations before a space can be occupied.

T. From the commencement to the completion of the Project, the Contractor shall keep the parts of the work and the buildings free from accumulation of water no matter what the source or cause of water.

U.

1. The General Contractor shall construct temporary partitions where shown on the Contract Documents or where otherwise required for safety of the public or to prevent dust from entering occupied areas. Partitions shall be dust-proof from floor to slab or structure above (if existing condition is a drop in tile ceiling, the Contractor shall remove tile and install partition to structure above). In addition to framing and sheetrock, the Contractor shall install fire resistant plastic partitions on the work area side of its work. If an access door is required, an alternating three-layer plastic system shall be used. The door shall be a standard hollow metal door with lockset and closer. Keys shall be distributed to the Owner's other contractors, the Owner, and the Architect.

2. All cutting and welding performed within an occupied building or adjacent to a window or intake vent shall be performed during off hours.

V.

1. The Contractor shall control the safe handling and storage of all welding materials, acetylene and oxygen tanks, and other equipment required for welding and cutting work at the job site. Such storage shall be in compliance with the Occupational Safety and Health Administration ("OSHA") regulations.

2. Welding materials and equipment shall be removed promptly from the premises upon completion of the welding and cutting work.

W. The Contractor shall be responsible for all costs incurred by the Owner caused by false security/fire alarms set off by the Contractor. Costs shall include custodial response charges etc.

X. The Contractor shall be responsible for broken glass, and at the completion of the Work shall replace such damaged or broken glass. After damaged or broken glass has been replaced,

the Contractor shall remove all labels, wash, and polish both sides of all glass. In addition to general broom cleaning, the General Contractor shall perform the following final cleaning for all trades at completion of the Work:

1. remove temporary protections;
2. remove marks, stains, fingerprints and other soil or dirt from painted, decorated and natural finished woodwork and other Work;
3. remove spots, plaster, soil and paint from ceramic tile, marble and other finished materials, and wash or wipe clean;
4. clean fixtures, cabinet work and equipment, removing stains, paint, dirt and dust, and leave same in undamaged, new condition;
5. clean aluminum in accordance with recommendations of the manufacturer; and
6. clean all floors thoroughly in accordance with recommendations of the manufacturer.

ARTICLE 5 SUBCONTRACTORS

A.

1. As soon as practicable after receipt of Letter of Intent to Award, Notice to Proceed or other form of official notice of award of the Contract, but not more than ten (10) days after receipt of official notice of award of the Contract, the Contractor shall furnish the Owner and the Architect, in writing, with: (1) the name, trade, and subcontract amount for each SubContractor; and (2) the names of all persons or entities proposed as manufacturers of the products identified in the Specifications (including those who are to furnish materials or equipment fabricated to a special design) and, where applicable, the name of the installing SubContractor. Copies of all SubContractor contracts, fully executed, are to be provided to the Owner and the Architect, including but not limited to all addenda, appendices, and/or exhibits including scope of work sheets. All such subcontracts shall be submitted to the Owner and the Architect within ten (10) days of the Owner's award of the contract to the Contractor.

2. Upon review of the Contractor's list of SubContractors, the Architect will advise the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, accepts or rejects, any proposed SubContractor. SubContractors will not be acceptable unless, when requested by the Architect, evidence is furnished that the proposed subcontractor has satisfactorily completed similar subcontracts as contemplated under this prime contract, and has the necessary experience, personnel, equipment, plant, and financial ability to complete the subcontract in accordance with the intent of the Documents. As verification of financial ability, the Owner reserves the right to request and receive up to five (5) years' worth of

financial statements, bank references, bond/insurance company references, and all other information required to assess financial ability.

3. If the Owner or the Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner and the Architect have no objection. No increase in the Contract Sum shall be allowed where a SubContractor is rejected by the Architect or the Owner who is: (1) deemed unqualified to perform the particular work subcontracted by the Contractor; (2) does not have the necessary experience, personnel, equipment, plant, and financial ability to complete the subcontract; (3) has a history of poor performance in work of similar nature; or (4) does not otherwise meet the requirements of this General Conditions. Upon receipt of a rejection of a SubContractor by the Architect, the Contractor shall have the right to request a meeting with the Architect and the Owner to discuss the reasons it believes the SubContractor is or is not qualified to perform the work. Upon review of such reasons, the Architect shall re-consider its determination and shall advise the Contractor of its determination upon such review. If the Architect still finds that such SubContractor does not meet the requirements above stated, it shall advise the Contractor. The Architect's determination upon such review shall be final and binding on the Contractor and its SubContractor and the Contractor hereby waives any and all claims it or its SubContractor might have against the Owner and/or the Architect concerning the rejection of such Contractor and shall require its SubContractors to execute such similar waiver in its Agreement with the Contractor.

4. The Contractor shall not change a SubContractor, person, or entity previously selected if the Owner or the Architect makes reasonable objection to such change.

B. By appropriate Agreement, the Contractor shall require each SubContractor to be bound to the Contractor by terms of the Contractor's Agreement with the Owner, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by said Agreement, assumes toward the Owner and the Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and the Architect under the Contractor's Agreement with the Owner so that subcontracting thereof will not prejudice such rights, and shall allow the SubContractor, unless specifically provided otherwise in the subcontract Agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by its Agreement with the Owner, has against the Owner. However, the Subcontract Agreement between the Contractor and SubContractor shall not provide, nor shall this Agreement be deemed to provide any rights, remedies, or redress by the SubContractor(s) against the Owner. Where appropriate, the Contractor shall require each subcontractor to enter into similar agreements with Sub-SubContractors.

C. The Contractor shall promptly notify the Owner and the Architect of any material defaults by any SubContractors and/or whether it has terminated its Agreement with any of its subcontractors for any reason.

D. The Contractor hereby assigns all of its rights in its Agreements with its SubContractor(s) and hereby does assign, transfer, and set over to the Owner all of its rights and/or interests in its Agreements with its SubContractor(s), but only in the event of termination of the Contractor's Agreement with the Owner pursuant to Article 17, paragraph A of these General Conditions and only to the extent the Owner implements its rights to take such assignment of contract by notifying the SubContractor in writing of its intention to do so. Such an assignment is subject to the prior rights of the surety, if any, obligated to the Owner pursuant to a performance bond submitted in connection with the Contractor's work.

E. If the Work in connection with a subcontract has been suspended for more than ninety (90) days after termination of the Contract by the Owner and the Owner accepts assignment of such subcontract, the SubContractor's compensation shall not be adjusted for any increase in direct costs incurred by such SubContractor as a result of the suspension.

F. It shall be the Contractor's responsibility, when subcontracting any portion of his work, to arrange or group items of work under particular trades to conform with then-prevailing customs of the trade, regardless of the particular Divisions and Sections of the Specifications in which the work is described.

G. All subcontracts must be in writing.

ARTICLE 6 CONTRACTOR'S USE OF DRAWINGS/SPECIFICATIONS

A. The Agreement between the Owner and the Contractor, and all documents incorporated therein by reference, including but not limited to, the Drawings and the Project Manual shall be signed by the Contractor and the Owner.

B. The intent of the Agreement between the Owner and the Contractor is to include all items necessary for the proper execution and completion of the work to be performed by the Contractor. The documents comprising the Agreement between the Contractor and the Owner are complementary, and what is required by one shall be as binding as if required by all.

C.

1. In the event of inconsistencies within or between parts of the Agreement between the Contractor and the Owner or between the Agreement between the Contractor and the Owner and applicable standards, codes, and ordinances, the Contractor shall: (a) provide the better quality or greater quantity of Work; or (b) comply with the more stringent requirement; either or both in accordance with the Architect's interpretation.

2. On the Drawings, given dimensions shall take precedence over scaled measurements and large-scale Drawings over small scale Drawings.

3. Before ordering any materials or performing any of its work, the Contractor and each SubContractor shall verify measurements at the Project and shall be responsible for the correctness of such measurements. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any difference which may be found shall be submitted to the Architect for resolution before proceeding with the performance of the work.

4. If a minor change in the Work is found necessary due to actual field conditions, the Contractor shall submit detailed drawings of such departure for the approval by the Architect before making the change.

5. Drawings, in general, are made to scale, but all working dimensions shall be taken from the figured dimensions or by actual measurements at the job and in no case by scaling. The Contractor shall study and compare all drawings and verify all figures before laying out or constructing the work and shall be responsible for any and all errors in his work which might have been avoided thereby. Whether or not an error is believed to exist, deviation from the Drawings and the dimensions given thereon shall be made only after approval in writing is obtained from the Architect.

6. In the event addendum(a) are issued and contain changes to the Drawings and/or the Specifications, the provisions in the addendum(a) supersede previously issued Drawings and/or the Specifications.

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

E. Unless otherwise stated in the Agreement, words and abbreviations which have well-known technical or construction industry meanings are used in the Agreements in accordance with such recognized meanings.

F. The Contractor, and all SubContractors, shall refer to all of the Drawings, including those showing the work of others performing work in connection with the Project, including but not limited to the General Contractor (if any), the Plumbing Contractor, the Heating, Ventilation, Air Conditioning Contractor, Electrical Contractor and other specialized trades, and to all of the Divisions of the Project Manual, and shall perform all work reasonably inferable therefrom as being necessary to produce the indicated results.

G. All indications or notations on the Drawings which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials, or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Drawings or the Project Manual. All work mentioned or indicated in the Drawings or the Project Manual shall be performed by the Contractor unless it is specifically indicated therein that the work is to be performed by others.

H. The Drawings, the Specifications, and other documents prepared by the Architect are instruments of the Architect's service through which the Contractor's work is to be performed. The Contractor may retain one contract record set during the course of the Project. Neither the Contractor nor any SubContractor, Sub-SubContractor or material or equipment supplier shall own or claim a copyright in the Drawings, the Specifications, and other documents prepared by the Architect, and unless otherwise indicated, the Architect shall be deemed the author of them and will retain all common law, statutory, and other reserved rights, in addition to the copyright. All copies of them, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work.

I. The Drawings, the Specifications, and other documents prepared by the Architect, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any SubContractor, Sub-SubContractor or material or equipment supplier on other Projects without the specific prior written consent of the Owner and the Architect. The Contractor, SubContractors, Sub-SubContractors and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Drawings, the Specifications, and other documents prepared by the Architect appropriate to and for use in the performance of its work pursuant to its Agreement with the Owner. All copies made under this license shall bear the statutory copyright notice, if any, shown on the Drawings, the Specifications, and other documents prepared by the Architect. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's copyright or other reserved rights.

J. The Owner shall furnish surveys describing physical characteristics of the site, upon written request of the Contractor and to the extent such survey is in existence at the time of said request, legal limitations, and utility locations for the Project. Nothing herein shall be construed as requiring the Owner to generate any document which it does not possess at the time of the request by the Contractor. In the event that the survey provided does not clearly delineate the metes and bounds of the Owner's property, the Contractor shall stop work and immediately notify the Architect and the Owner. The Contractor shall NOT proceed with its work until it receives written permission from the Owner and/or the Architect. The Contractor shall be fully responsible for all costs arising from non-compliance with this provision. Any delays associated with this provision shall not serve as a basis for a claim by the Contractor.

K. From the basic data established by the Owner, the General Contractor shall establish reference control points and complete the layout of the work. Each contractor is responsible for utility markouts as it pertains to the scope of their work and maintaining markout during work. Sketch of layout with reference points to be given to the Owner and the Architect at the time of markout.

L. The Contractor shall be responsible for all measurements that may be required for execution of the work to the exact position and elevation as prescribed in the Specifications, shown on the Drawings, or as the same may be modified at the direction of the Architect to meet changed conditions.

M. The General Contractor shall be responsible for the establishment of points, wall, and partition lines required by the various Prime Contractors and their respective SubContractors in laying out their work.

N. Each contractor shall furnish such stakes and other required equipment, tools, and materials, and all labor as may be required in laying out any part of the work from the base lines and benchmarks established by the Owner.

O.

1. The General Construction Contractor shall establish a baseline and benchmark system for each building addition, area of renovation or component using the services of a licensed professional surveyor. The surveyor(s) employed to establish this system or to extend and maintain an existing benchmark system for the work of other trades shall have not less than five (5) years of experience in performing construction surveys similar to the work they will perform for the Project. The remaining contractors and their respective subcontractors shall be responsible for extending these lines, levels, and grades, and for performing all layout for their own work. The Contractor is solely responsible for any damage or loss due to incorrect extension of lines, level, or grades in their layout. The Contractor and its SubContractors shall be responsible for the accuracy with respect to the layout of their work. Any discrepancies or errors in the Drawings, perceived by another contractor or subcontractor shall be immediately reported to the Owner and the Architect. If any corrections are necessary, they shall be executed in accordance with the terms and provisions of these General Conditions.

2. The Contractor and its SubContractors shall be responsible to offset or to protect their markings from anything that may disturb them.

3. Every contractor shall work off the lines and elevations established and maintained as the baseline and benchmark system.

4. Each contractor is responsible for the accuracy of his own work.

P. The Architect may require that construction work be suspended at any time when location and limit marks established by the Contractor are not reasonably adequate to permit checking completed work or the work in progress.

Q. Except for the basic building permit, and other permits that the Architect may be required to obtain on behalf of the Owner, the Contractor shall be responsible for securing and maintaining for the life of the Project: all permits, P.E. Licenses, connection fees, inspections, etc. applicable to, or customarily secured for the work. This provision includes any permits to be issued in the name of the Contractor required for the work. Originals of all permits are to be issued in the name of the Contractor as required for the work. The Contractor shall furnish the Owner and the Architect with original copies of all permits prior to the commencement of the work and shall prominently display a copy of all permits at a location approved by the Owner.

R. The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies, or omissions discovered shall be reported to the Architect in writing at once.

S. The exactness of grades, elevations, dimensions, or locations given on any drawings issued by the Architect, or the work installed by other contracts, is not guaranteed by the Architect or the Owner. The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions, utilities, and locations. In all cases of interconnection of its Work with existing or other work, it shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, locations, or dimensions shall be promptly rectified by the Contractor without any additional cost to the Owner.

T.

1. The Contractor shall give the Architect timely written notice of any additional design drawings, specifications, or instructions required to define its work in greater detail, or to permit the proper progress of its work. To the extent the Architect advises the Contractor that the Drawings, the Specifications and/or instructions given are sufficiently detailed for the Contractor to perform its work, the Architect shall be under no obligation to further clarify or define the work to be performed. In all other circumstances, the Architect shall issue a field order which responds to the request for information.

2. Requests for Information ("RFIs") are for requests on clarifications or questions on the Drawings and/or the Specifications, not contract terms, scheduling items, or general correspondence nor, as a means to describe or request approval of alternate construction means, methods or concepts or substitution of materials, systems means and methods. The Contractor shall fill all RFIs out in accordance with the provisions of the Project Manual. The Architect shall not complete said forms out on the Contractor's behalf.

U. The Contractor shall, prior to the start of any portion of the Work:

1. review any specified construction or installation procedures, including those as may be recommended by the proposed manufacturer.

2. advise the Architect if the specified procedure(s) deviates from good construction practice.

3. advise the Architect if following said procedure(s) will affect any warranty, including the Contractor's general warranty.

4. advise the Architect of any objections the Contractor may have to the specified procedure(s).

5. propose any alternative procedure(s) which the Contractor will warrant.

V.

1. To the fullest extent possible, the Contractor shall provide products of the same kind, from a single source. When two or more items of same material or equipment are required (pumps, valves, air conditioning units, etc.), they shall be of the same manufacturer. Product manufacturer uniformity does not apply to raw materials, bulk materials, pipe, tube, fittings (except flanged and grooved types), sheet metal, wire, steel bar stock, welding rods, solder, fasteners, motors for dissimilar equipment units, and similar items used in the work, except as otherwise indicated. The Contractor shall provide products which are compatible within systems and other connected items. If the Contractor is given option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

2. The Contractor is responsible for providing products and construction methods compatible with products and construction methods of other Contractors. If a dispute arises between contractors over concurrently selectable but incompatible products, the Architect will determine which products shall be used.

3. With respect to sitework materials, all products submitted for use and incorporated into the Project shall be on the Approved List of Materials and Equipment published by the NYSDOT Materials Bureau, most recent edition.

4. All products submitted for use and incorporated into the Project shall be asbestos free.

W. Equivalents. In the Specifications, one or more kinds, types, brands, or manufacturers or materials are regarded as the required standard of quality and are presumed to be equal. The Contractor may select one of these items or, if the Contractor desires to use any kind type, brand, or manufacturer or material other than those named in the Specifications, they shall indicate in writing, and prior to award of contract, what kind, type, brand, or manufacturer is included in the base bid for the specified item. The Contractor shall follow the submission requirements for substitutions as set forth in Article 6.X below.

X.

1. Substitutions. If the Contractor desires to substitute any kind, type, brand, or manufacturer of material other than those named in the Specifications, the Contractor shall indicate the desired substitution in its bid, including the following:

- a. For which specified material or equipment the request for substitution is being made;
- b. What kind, type, brand, or manufacturer is sought to be substituted for the specified items;

- c. Written documentation evidencing that the substituted material or equipment meets or exceeds the Specifications for materials and/or equipment set forth in the Project Manual. Such documentation shall include, but not limited to, a full explanation of the proposed substitution, together with a submittal of all supporting data including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, significant qualities of proposed substitution (*e.g.*, performance, weight, size, durability, and visual effects), and other like information necessary for a complete evaluation of the substitution. Additionally, the Contractor shall provide material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated. All such data shall be provided to the Architect and the Owner at the Contractor's sole expense. The Contractor's written explanation shall also include a list of reasons the substitution is advantageous and necessary, including the benefits to the Owner and the Project in the event the substitution is acceptable. Additionally, the Contractor shall submit to the Architect information describing in specific detail how the proposed substituted product differs from the quality and performance required by the Specifications, and such other information as may be required by the Owner or the Architect.
- d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors that will be necessary to accommodate proposed substitution.
- e. Samples, where applicable or requested.
- f. Detailed comparison of the Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
- g. Detailed comparison of the difference in cost between the specified product and the proposed substitution, including any and all costs associated with changes or modifications needed to other parts of the work and to construction performed by the Owner and/or separate contractors that will be necessary to accommodate proposed substitution. In the event the substitution is accepted, the Contractor proposing the use of the substitution shall bear all costs associated with said changes or modifications.

2. By making said requests in conformance with procedures established herein and elsewhere in the Project Manual, the Contractor:

- a. represents that a representative of it has personally investigated the proposed substitute product and has determined that it is equal to or superior in all respects to that specified;
- b. represents that the warranty for the substitution will be the same, or greater than, that applicable to the specified product;
- c. certifies that the cost data is complete and includes all related costs under this contract, including professional services necessary and/or required for the Architect and engineers to implement said substitution and waives any and all claims for additional costs related to the substitution which subsequently become apparent;
- d. represents that it will coordinate the installation of the accepted substitute, making all such changes to the Drawings effected by the change, including but not limited to the electrical, plumbing, site work, and heating and ventilating specifications as may be required for the work to be complete in all respects;
- e. will provide an affidavit stating that: (1) the proposed substitution conforms and meets all the requirements of the pertinent specifications and the requirements shown on the Drawings; and (2) the Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Architect; and the proposed substitution will have no effect on the construction schedule.

3. Proposals for substitutions shall be submitted with the Contractor's bid.

4. No substitutions will be considered or allowed without the Contractor's submittal of complete substantiating data and information as stated hereinbefore.

Y.

1. Submittal of shop drawings, product data, material safety data sheets, samples, or similar submittals shall be in accordance with the provisions of the Project Manual.

2. The Contractor represents and warrants that all shop drawings have been prepared by persons and entities possessing expertise and experience in the trade for which the shop drawing is prepared and, if required by the Architect or applicable law, by a licensed engineer, job specific, reviewed by the Contractor and stamped by the Contractor.

3. If the Contractor elects to perform its work without approvals, such work shall be at the Contractor's own risk and expense.

4. By approving and submitting shop drawings, product data, samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto and has checked and coordinated the information contained within such submittals with the requirements of its work.

5. The Contractor shall not be relieved of responsibility for deviations from requirements of its work by the Architect's approval of shop drawings, product data, samples, or similar submittals, unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and the Architect has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors and/or omissions in the shop Drawings, product data, samples or other of its submittals to the Architect, by the Architect's approval thereof.

6. The Architect shall review, approve, reject, or take other appropriate action respecting submittals made by the Contractor as set forth in the Project Manual. The Architect shall check for conformance with information given in the Drawings and Project Manual and the design concept expressed in the Agreement between the Owner and the Contractor. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities or for substantiating instructions for installation or performance of equipment or systems designed by the Contractor, all of which remain the responsibility of the Contractor. Further, the Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of construction means, methods, techniques, sequences, or procedures.

The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component. When professional certification of performance characteristics of materials, systems or equipment is required by the Contract Documents, the Architect shall be entitled to rely upon such certification to establish that the materials, systems, or equipment will meet the performance criteria required by the Contract Documents.

7. Upon the Architect's rejection of the Contractor's shop drawings, product data, samples and/or other documentation submitted by the Contractor to the Architect, the Contractor shall review the rejection and re-submit such shop drawing, product data, sample and or other document in accordance with the Architect's instruction. The Contractor shall direct the Architect's specific attention in writing or on re-submitted shop drawings, product data, samples, or similar submittals, to revision which have been made, including revisions not specifically requested by the Architect. Resubmission of rejected documents shall be performed within two (2) calendar days. No claim for delay or cost shall be accepted as a result of rejected documents.

8. When professional certification of performance criteria of materials, systems or equipment is required of the Contractor, the Architect shall be entitled to rely in a reasonable and

professional fashion upon the accuracy and completeness of such calculations and certifications provided, however, if the Architect, in its reasonable and professional judgment considers it advisable, the Architect shall verify the accuracy and completeness of any and all such calculations and/or certifications. In the event any and all such calculations and/or certifications are found to be inaccurate and/or incomplete by the Architect, the Contractor shall assume full responsibility and bear all costs attributable or related thereto, including, without limitation, the expense of the Architect's additional services associated with the verification of such calculations and/or certifications and the expense of the Architect's additional service made necessary by the failure of such calculations and/or certifications to be accurate or complete.

9. If the Architect is required to review the Contractor's submittal more than twice, the Contractor shall bear the cost and expense associated with such additional review as set forth in the Project Manual.

Z. The Architect will interpret and decide matters concerning performance under and requirements of the Drawings and/or the Specifications on written request of the Contractor. Such interpretations may, at the Architect's option, be issued in the form of additional drawings or instructions indicating in greater detail the construction or design of the various parts of the Contractor's work. Such drawings or instructions may be forwarded by the Architect to the Contractor by field order, construction change directive or other notice to the Contractor. The Contractor shall execute the work for which it requested an interpretation in accordance with such additional drawings or instructions without additional cost or extension of its contract time. After a decision has been rendered by the Architect on a matter for which the Contractor sought the Architect's interpretation of the Drawings and/or the Specifications, the Contractor shall proceed with the work as directed by the Architect. Failure to proceed with the work in accordance with the Architect's interpretation may be used as a basis for termination of the Contractor's contract pursuant to Article 17 of these General Conditions.

AA. The Contractor shall maintain at the site one record copy of the Drawings, the Specifications, Addenda, Change Orders, and other Modifications, in good order and marked currently to record changes and selections made during construction, and in addition approved shop drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and the Owner and shall be delivered to the Owner upon the completion of its work.

BB. The Contractor shall maintain at the site, and shall make available to the Owner and the Architect, one record copy of the Drawings (the "Record Drawings") in good order. The record drawings shall be prepared and updated during the prosecution of the Contractor's work. The prints for record drawing use will be a set of black line prints provided by the Architect to the Contractor at the start of construction. The Contractor shall maintain said set in good condition and shall use colored pencils to mark up said set with "record information" in a legible manner to show: (i) deviations from the Drawings made during construction; (ii) details in the work not previously shown; (iii) changes to existing conditions or existing conditions found to differ from those shown on any existing drawings; (iv) the actual installed position of equipment, piping,

conduits, light switches, electric fixtures, circuiting, ducts, dampers, access panels, control valves, drains, openings, and stub-outs, etc.; (v) architectural and/or structural changes in the design; and (vi) such other information as either the Owner or the Architect may reasonably request. At the completion of the work, Contractor shall transfer all information on record drawings to reproducible drawings with new information clouded and noted. Such drawings shall be stamped with the Contractor's name and "AS-BUILT" in the lower right hand corner. The colored record drawing and the as-built reproducible drawing shall be forwarded to the Owner. Final payment and any retainage shall not be due and owing to the Contractor until the record and/or as built drawings receive the approval from the Architect and the Owner (and all other closeout requirements are met).

CC. The Contractor shall maintain all approved permit drawings in a manner so as to make them accessible to government inspectors and other authorized agencies. All approved drawings shall be wrapped, marked, and delivered to the Owner within sixty (60) days of final completion of the Contractor's work.

DD. Each Prime Contractor shall be furnished, free of charge, three (3) copies of the Contract Documents and Project Manuals, including all Addenda. Any and all additional copies will be furnished to the Contractor at the cost of reproduction, postage, and handling.

ARTICLE 7 CONTRACTOR'S SAFETY/SECURITY PROGRAM

A.

1. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of its work. Prior to beginning any work, the Contractor shall submit a copy of its corporate safety plan to the Owner and the Architect. Two (2) weeks after receipt of the Notice to Proceed, the Contractor shall provide a Site Safety/Logistics Plan to the Owner and the Architect. The site logistics plan should minimally include locations of the eight-foot high temporary fence and gates, traffic plans for deliveries and removals, refuse container locations, crane locations, pick locations, boom radius, and lift locations, stockpiles, toilet locations, site water and power locations, and safety. This plan shall also show the location of all staging and storage areas, clearly separating construction and school areas. The logistical information represented by the construction documents shall serve as a minimal guide. Each contractor is required to submit their corporate safety policy within ten (10) days of receipt of the Notice to Proceed. Said policy must minimally meet OSHA standards and define details concerning the maintenance of a safe work environment and shall also define practices for the maintenance of hygiene and minimizing the spread of infectious/contagious diseases. The Contractor shall make the participation of its SubContractors in its safety program mandatory. A list of key personnel, with addresses and telephone numbers for emergency purposes shall be forwarded to the Owner and the Architect. The Owner and the Architect shall establish a fire coordination procedure and shall forward same to the Contractor for its use during the performance of its work.

2. Where applicable, the Contractor shall provide its COVID-19 Safety Plan to the Owner prior to the start of any work. The Contractor shall designate a person on its staff to be responsible for monitoring the wearing of Personal Protective Equipment (PPE) by each person on site working with or for the Contractor. The Contractor shall strictly follow and ensure that its SubContractors follow Contractor's COVID-19 Safety Plan, as well as all applicable Center for Disease Control guidelines and Local, State & Federal Orders.

3. All laborers, workers, and mechanics employed in the performance of the work of the Project shall be certified as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration.

4. The Contractor and its SubContractors shall conduct their operation in accordance with the Safety Guides for Construction as issued by the New York State Education Department ("NYSED"), and the Contractors' Safety Program.

5. All safety equipment, including hard hats and weather protective gear required for the Contractor to perform its work, are to be supplied by the Contractor and/or its SubContractors. Within the designated construction areas, the Contractor's employees, superintendents, and/or other agents, and its SubContractors, employees, superintendents, and/or other agents are required to wear hard hats and other required and/or essential safety equipment. Each person seen without a hard hat, or otherwise failing to comply with this requirement, will be ordered to leave the Project. No prior warnings will be given by the Owner and/or the Architect. The Contractor and its SubContractors shall be solely responsible for making up and paying for any loss of production or required progress resulting from the removal of personnel from the Project as set forth herein including any costs incurred by the Owner in connection with the work of other contractors.

6. The Contractor and its SubContractors shall provide blankets and auxiliary fire protection as part of its construction safety program to prevent damage to adjacent work or materials as a result of its welding or burning operations. Additionally, as part of its construction safety program, the Contractor and its SubContractors shall provide a fire watch, with a fire extinguisher, which is acceptable to the Owner.

7. The Architect and/or the Owner reserve the right to have all operating equipment periodically inspected by an independent inspector whose finding will be binding. The Contractor, at its own expense, must make corrections within two (2) working days of receiving a written report.

8. All flagmen required for deliveries to the site are to be furnished by the Contractor or its SubContractors responsible for the delivery. Any and all deliveries crossing the site or student traffic areas shall be escorted by flagmen. All flagmen shall wear orange vests.

B. The Contractor shall schedule weekly safety meetings and each of its SubContractors must be properly represented at such meetings. The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. The Contractor shall notify the Architect and the Owner in writing of its "OSHA Competent Person Regarding Safety." Said person must be an individual 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. This person shall be the Contractor's superintendent, unless otherwise designated by the Contractor in writing to the Owner and the Architect. The Contractor shall take all necessary steps to prevent its employees from disturbing and/or damaging the facility and shall be responsible for preventing the escape of fires set in connection with the construction. The Contractor shall notify its employees and its SubContractors of the location of the nearest fire alarm box at all locations where the work is in progress. On a weekly basis, the Contractor shall submit to the Owner and the Architect minutes of its safety meetings, which minutes shall include a list of the individuals present at such meetings.

C. The Contractor and each of its SubContractors shall conduct its/their operation in accordance with all applicable federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies. The Contractor agrees, in order that the work will be completed with the greatest degree of safety to conform to the requirements of the Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, including all standards and regulations that have been since or shall be promulgated by the governmental authorities which administer such acts.

D. The Contractor shall give notices and comply with applicable federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies, of public authorities or governmental agencies bearing on safety of persons or property or their protection from damage, injury, or loss.

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

F. The Contractor shall take reasonable precautions for the safety and protection of employees at the Project and other person who may be affected by its work, including but not limited to students, staff, employees, and agents of the Owner and the Architect.

G. The Contractor shall protect and secure its work and the materials and/or equipment to be utilized in connection with its work, whether stored on or off the site and whether in its care, custody, and control or that of its SubContractors, subcontractors to its subcontractors, or material suppliers.

H. The Contractor shall take all steps necessary to protect all property at or adjacent to the site, including but not limited to trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

I. All delivery vehicles/trucks/machinery/etc. permitted on the site must be equipped with back-up alarms and enter through the designated access points. The Contractor's failure to demonstrate this ability will result in cancellation of delivery or stoppage of work. All delays associated with this cancellation will be the responsibility of the Contractor responsible for the work involved.

J. All crane picks, materials delivery, etc. must be coordinated so as not to lift over any occupied area of the building. If absolutely necessary, this work shall be done on off hours to ensure the safety of the building occupants. Crane location must be approved by the Architect and the Owner in writing prior to the use of same to ensure the safety of building occupants.

K. The Owner or the Architect reserves the right to have all hoisting equipment periodically inspected by an independent inspector whose findings will be binding. The Contractor, at its own expense, must make corrections cited by the inspector before continuing work. The Owner or the Architect will not assume any responsibility for the safe operation of any hoisting equipment by exercising this right. The Contractor and/or its SubContractor(s) shall cooperate with the inspector by allowing time for the inspection. The Contractor shall be notified twenty-four (24) hours prior to the time of the inspection. These inspections do not release the Contractor if its responsibility to provide all engineering, permits and inspections as required by OSHA or the NYSED prior to use of any hoisting equipment.

L. The Contractor shall use the entrances designated on the site logistic plans and Drawings for personal vehicles, trucks, equipment, deliveries, and the like.

M. All interior temporary partitions and emergency egress barriers (if required) are to be installed on an after-hours basis (weekends/school holidays).

N.

1. When use or storage of hazardous materials or equipment or unusual construction methods are necessary to perform its Work, the Contractor shall obtain the Owner and the Architect's consent for the use of such materials, equipment, or unusual construction methods. In the event the Owner determines that the use of such hazardous material or equipment or unusual construction methods can be performed by the Contractor with alternative means, methods and/or techniques, the Contractor shall employ such alternate means of prosecuting its work at no additional cost to the Owner.

2. In the event the Owner approves the use or storage of such hazardous materials, equipment or unusual construction methods, the Contractor shall provide for the Owner's and the Architect's use a full set of safety instructions relating to all such materials. Additionally, when the Owner and/or the Architect reviews the use of storage of such hazardous materials,

equipment, and or unusual construction methods, the Contractor shall exercise the highest degree of care and carry on such activities under supervision of properly qualified personnel.

3. Transportation, storage, and use of explosives shall be in strict accordance with all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies of public authorities or governmental agencies. All safety precautions as set forth in the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, Inc. shall be observed.

4. The Contractor is responsible for its own storage and personnel trailers at the site. The Contractor will be required to supply man trailers and storage box trailers as required. All costs related to delivery, construction, protection, power, etc. for said trailers are the responsibility of the Contractor utilizing the space. The Owner WILL NOT PROVIDE STORAGE SPACE. The placement of personnel and/or storage trailer will be strictly limited to pre-determined locations. The Contractor shall obtain the prior written approval of the placement of any trailer or storage box from the Owner.

O. During construction, the General Contractor shall be responsible for maintaining a watertight structure. This shall include additions and existing buildings. The General Contractor shall be responsible for temporary roofing, tarps and other protection at roofs, cavity walls, etc. Should the General Contractor fail to provide adequate protection, causing flooding, damage or other disturbance to the existing building, the Contractor shall be responsible for all costs associated with clean up and repairs. Inasmuch as flooding and damage have safety implications to the general public, clean up and repairs may be made by the Owner without warning to the General Contractor. Administration costs incurred by the Owner and Architect will also be back charged to the General Contractor. The General Contractor, by entering into contract with the Owner agrees to be liable for these costs.

P. When all or a portion of the Contractor's work is suspended for any reason, the Contractor shall securely fasten down all coverings and protect the work, as necessary, from injury or damage by any cause.

Q.

1. The Contractor shall promptly remedy damage and loss to all property of the Owner, or adjacent to the Owner's property (other than damage or loss covered by insurance) caused in whole or in part by the Contractor, a SubContractor, a Sub-SubContractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable, except damage or loss attributable to acts or omissions of the Owner or the Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor.

2. Title to all completed or partially completed work at the job site, and to all materials delivered to and stored at said job site which are intended to become a part of the completed work covered by the Agreement between the Contractor and the Owner, shall be in

the name of the Owner. Notwithstanding the foregoing, and prior to acceptance of the completed work by the Owner, the Contractor shall be liable for all loss of or damage to said completed work, partially completed work, materials furnished by the Contractor, and/or materials or equipment furnished by others, the custody of which has been given to the Contractor, arising from any cause other than those against which the Owner herein undertakes to carry insurance. In the event of loss or damage caused by the Contractor, the Contractor shall replace or repair same at its own cost and expense, to the satisfaction of the Owner and the Architect.

R. The Contractor shall promptly report in writing to the Owner and the Architect all accidents arising out of or in connection with the Work which cause death, person injury, or property damage, giving full details and statements or any witnesses. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner and the Architect.

S. In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss.

T. Any and all fines or citations levied against the Owner or the Architect due to the failure of the Contractor to comply with regulations of any governing authority, shall be paid for by the Contractor. This shall include any interest or late charges which accrue due to the Contractor's failure to remit payment upon receipt of such levies.

U. The Contractor acknowledges that the Labor Law of the State of New York, and regulations adopted thereunder, place upon both the Owner and the Contractor certain duties and that liability for failure to comply therewith is imposed on both the Owner and the Contractor regardless of their respective fault. The Contractor hereby agrees that, as between the Owner and the Contractor, and to the extent permitted by law, the Contractor is solely responsible for compliance with all such federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies imposed for the protection of persons performing the Contract.

V. The Owner and/or the Architect will not assume any responsibility for the safe operation of any cranes or equipment. The Contractor and its SubContractors shall cooperate with the inspector by allowing time for inspection. The Contractor will be notified twenty-four (24) hours prior to the time of the actual inspection. The Contractor is obligated to perform all engineering, obtain all permits (except as otherwise noted in Article 6(Q), and to have all hoisting equipment inspected as required by OSHA, Village, Town, County, State, and Federal regulations as well as any other agency having jurisdiction. Copies of all inspection reports and certificates must be transmitted to Architect and the Owner as soon as possible.

**ARTICLE 8
CHANGES IN THE WORK**

A. Without invalidating the Agreement between the Owner and the Contractor, and without notice to the Contractor's surety, the Owner may, at any time or from time to time, order additions, deletions, or revisions in the Contractor's work. Such additions, deletions, or revisions will be authorized by field order, change order, or construction change directive.

B. Field orders are an interpretation of the Drawings and/or the Specifications which order minor changes in the Contractor's work which will not result in an increase or decrease in the Contractor's total contract sum. From time to time, the Architect may issue field orders to the Contractor. The work included in such field order shall be performed by the Contractor at no additional cost to the Owner and shall not form the basis for a claim for an extension of time of the Contractor's time to complete its work. Hence, the Contractor shall perform the work included in field orders so as to cause no delay to its work and/or the work of other contractors engaged by the Owner in connection with the Project. All field orders shall be given to the Contractor and the Owner by the Architect in writing.

C.

1. When the Owner or the Architect request that the Contractor perform work which is not included in the contract Drawings or the Specifications and which will result in additional cost to the Owner, the Architect shall issue a PCO Number and shall request that the Contractor submit its proposal for performing such additional work. The Contractor shall submit its proposal to the Architect for review. The Contractor's proposal shall include a complete itemization of the costs associated with performing its work including labor and materials. All proposals for any work that a contractor, its subcontractor(s) or subcontractor(s) of subcontractor(s) perform in connection with additional work shall be submitted using the following format and in no event shall the total for overhead and profit on any change order exceed fifteen percent (15%) of the cost of the work.

1.	Materials (Itemized Breakdown) including quantities and cost	
2.	Labor (Itemized Breakdown)	
3.	Subtotal (Add lines 1 and 2)	
4.	Credit for work not required due to additional or changes to the work reflected in the within change order (if any)	
5.	Overhead (10% x line 3)	
6.	Subtotal (Add lines 3 through 5)	
7.	Sub-Contract Work (Include itemized breakdown. Sub-Contractor(s) overhead and profit allowed is 10%)	
8.	Subtotal (Add lines 6 and 7)	
9.	Profit (5% x line 8)	
10.	Subtotal (Add lines 8 and 9)	
11.	Rental Value of Equipment (Itemized Breakdown)	

12.	Actual additional charges for bonds	
13.	TOTAL CHANGE ORDER (Add lines 10, 11 and 12)	

2. All proposals submitted by the Contractor without the itemization indicated herein will be returned to the Contractor for re-submission by the Contractor. For any work performed by the Contractor's own forces, fifteen percent (15%) for overhead and profit will be allowed for labor and material related costs. Costs to which overhead is to be applied shall be limited to cost of labor and materials including the cost of delivery. Under no circumstances shall any change order proposal exceed fifteen percent (15%) of the cost of overhead and profit.

The Contractor shall not be entitled to recover overhead and profit on the rental value of equipment and machinery. "Equipment and machinery" shall not include: (1) tools customarily used by the Contractor's trade, including but not limited to hand tools; and/or (2) equipment and machinery already on site and being utilized by the Contractor for the original scope of work.

The Contractor shall submit with its change order proposals actual invoices from its insurance broker reflecting actual additional costs associated with the procurement of bonds.

3. The Contractor's SubContractor's proposal for any work it is to perform in connection with the additional work shall only include ten percent (10%) for the SubContractor's overhead and profit including sub-subcontracted work. The Contractor is entitled to five percent (5%) on work performed by its SubContractor in accordance with paragraph C(1) of this Article 8. Costs to which overhead is to be applied shall be limited to cost of labor and materials including the cost of delivery. Under no circumstances shall the Contractor or the Contractor's SubContractor(s) be entitled to be reimbursed for overtime, except when specifically approved by the Owner in writing and not as an Extraordinary Measure as set forth in Article 13, and in such event the Contractor shall be paid for by the Owner on the basis of premium payment.

4. Notwithstanding the foregoing, work which is performed pursuant to an allowance included in the Contractor's base contract, the provisions of Article 9, paragraph B, concerning itemization of such work shall be controlling.

5.
 - a. A change in the Contract Sum shall be accomplished only by a written Change Order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim as defined in Article 18 of these General Conditions to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents. **No amount shall be payable by the Owner to the Contractor for performance of work without a written and fully executed Change Order.**

- b. Upon the Contractor's completion of the Change Order work, and prior to payment being made to the Contractor for such work, the Contractor shall provide the Owner with the following information:

- (1) Certified payrolls itemizing the labor actually utilized in connection with the change order work.
- (2) Copies of invoices from SubContractors supplying work in connection with the change order work.

D.

1. When the Owner or the Architect request that portions of the Contractor's work originally included in the Drawings or the Specifications be deleted and which will result in a reduction of the Contractor's original contract sum, the Architect shall request that the Contractor submit its proposal for deleting the scope of such work from its contract. The Contractor's proposal shall include a complete itemization of the costs associated with deducting such work including labor and materials and shall be submitted using the format set forth in Article 8, paragraph C(1) or the schedule of values, whichever is greater. The Contractor shall not be entitled to retain its overhead and/or profit for such work nor shall any of its SubContractors which were to perform the work being deducted from the Contractor's scope of work. Additionally, the Contractor shall reflect the reduced cost of premiums on bonds which are to be supplied herein as a result of such change. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase/decrease with respect to that change.

2. The Owner may in its sole discretion deduct and/or reduce the scope of the Contractor's contract with or without any specific reasons therefor.

E.

1. In the event the Contractor and the Owner cannot agree on the sum by which its contract with the Owner is to be increased or reduced based upon changes to the scope of the work as described in this Article 8, the Architect shall issue a construction change directive reflecting the deduction and/or reduction of the scope of the Contractor's contract and the Contractor will: (a) in the case of additional work to be performed by the Contractor, perform such additional work in an expeditious manner so as not to delay the work of this or other contractors working at the site; and (b) in the case of work to be deducted from the scope of the Contractor's work, refrain from taking any steps in connection with the work associated with the deduction and/or reduction of the scope of the Contractor's work. The construction change directive shall include: (a) a description of the work being added or deducted from the Contractor's scope of work; (b) the amount the Owner has determined to be the cost associated with the additional work or deduction and/or reduction of the scope of the Contractor's contract until the Owner and the Contractor agree upon the increase or decrease in the Contractor's contract sum, or until a claim filed by the Contractor has been determined; (c) the extent to which the contract time will be adjusted as a result of the change in the scope of work. Any claims must be filed in accordance with the requirements set forth in Article 18 of these General Conditions.

Failure to timely file any claim in accordance with requirements set forth therein shall constitute a waiver of such claim.

2. In the event the Contractor and the Owner reach Agreement on the amount by which the Contractor's contract sum is to be increased or decreased based upon changes to the scope of the Contractor's work as described in this Article 8, the Architect, the Owner, and the Contractor shall sign a change order reflecting such agreement. The change order shall include: (a) the description of the change in the scope of the Contractor's work; (b) the amount of the adjustment to the Contractor's contract sum, if any; and (c) the length of time by which the time to complete the contract will be adjusted, if any. Agreement between the Owner and the Contractor in connection with any change order shall constitute a final settlement of all matters relating to the change in the Contractor's work as reflected in said change order, including but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contractor's contract sum and the construction schedule. All such change orders for which the Owner and the Contractor have reached agreement shall be included as a separate line item in the Contractor's applications for payment as if originally part of the Contractor's agreement with the Owner.

F. Neither the Owner nor the Architect may issue instructions to the Contractor to change the amount of the Contract, except by properly executed Change Orders or Construction Change Directive. Instructions are issued by the Owner or the Architect, to the Contractor. The instructions shall not be carried out by the Contractor prior to a written order in the form of a Change Order, signed by the Owner, the Architect, and the Contractor, authorizing a change in the Contract amount or an adjustment to the Contract Sum. No amount shall be payable by the Owner to the Contractor for performance of work without an executed Change Order.

ARTICLE 9 PAYMENTS

A.

1. Prior to commencing its work on the Project and within one (1) week of receipt of a Notice to Proceed, the Contractor shall submit to the Architect, a schedule of values which includes the amount of money it has allocated in its bid price for the following items of work which are applicable to the Contractor's work. Said schedule of values shall include each of the CSI division sections reflected in the Specifications and applicable to the contract for which the Contractor has been awarded the contract, together with the requirements for bonds/insurance (based upon actual invoice amount), general conditions, meeting attendance and meeting documentation (at least two percent (2%) of the contract sum), shop drawing/product data/sample submissions (at least one percent (1%) of contract sum), labor and materials on line items as applicable, temporary utilities and services, HVAC balance reports, coordination drawings, punch list (at least one percent (1%) of the contract sum), warranties/guarantees and close out of the Project (at least three percent (3%) of the contract sum), and allowance, where applicable.

2. Any schedule of values which fails to include sufficient detail, is unbalanced, or exhibits "front loading" of the value of the Contractor's work will be rejected. Furthermore, if the schedule of values has been approved by the Architect and is subsequently used, but later is found by the Architect to be improper for any reason, sufficient funds shall be withheld from the Contractors' future applications for payment to ensure an adequate reserve (exclusive of normal retainage) to complete the Contractor's work.

3. The schedule of values shall be drafted so as to reflect multiple construction sites, multiple locations within each site, additions versus renovations of work, and the like so as to satisfy any NYSED requirements for the Project.

4. The schedule of values prepared by the Contractor must be approved by the Architect prior to the payment of any sums due the Contractor.

B. The Contractor shall include in its contract sum all allowances stated in the Specifications. However, the Contractor's costs for unloading and handling at the site, overhead, profit, and other expenses contemplated for the stated allowance amounts shall be included in its contract sum and not in the allowances.

C. The Contractor shall submit its applications for payment to the Architect on a periodic basis. The form to be used by the Contractor shall be AIA G732 and 703 approved by the Architect, and the Owner for use in connection with the Contractor's work. The form shall be divided in sufficiently in the same form as the Contractor's schedule of values and shall reflect in separate line items for the work:

1. Total value of the work listing labor and material separately.
2. Percentage of work completed at the time of submission of the application for payment.
3. Value of the work completed at the time of submission of the application for payment.
4. Percent of previous amount billed.
5. Previous amount billed.
6. Current percent completed.
7. Value of work completed to date.
8. Percent remaining to be completed by the Contractor.
9. Value of work remaining to be completed by the Contractor.

D.

1. Payments to the Contractor shall be based upon materials and equipment delivered and suitably stored at the site and/or incorporated into the Contractor's work, together with the labor utilized by the Contractor in connection with its work. The Contractor may be paid for materials and/or equipment which has been delivered to the Owner's facilities but which, at the time of submission of its application for payment, has not yet been incorporated into the Contractor's work upon such conditions and requirements as the Owner and/or the Architect may advise the Contractor it must satisfy.

2. The Architect shall review the application for payment submitted by the Contractor and shall advise the Contractor of any adjustments to be made thereto. The Architect may make such adjustments under the following circumstances:

- a. the Contractor's failure to remedy defective work;
- b. the filing of third-party claims or reasonable evidence that there is a probability that such claims will be filed;
- c. receipt by the Owner of a notice of withholding from the New York State Department of Labor or other administrative agencies having jurisdiction over the Project;
- d. the Contractor's failure to make proper payments to its SubContractors or material suppliers for labor, materials and/or equipment;
- e. reasonable evidence that the Contractor will not complete its work for the unpaid balance of the remaining monies on its contract;
- f. damages caused to the Owner, the Architect or another contractor as a result of the Contractor's performance of its work;
- g. reasonable evidence that the Contractor will not complete its work in accordance with its Agreement with the Owner, and/or that the remaining monies available on the Contractor's contract will not be sufficient to cover actual or liquidated damages for the anticipated delay;
- h. the Contractor's failure to carry out its work in accordance with the Drawings and/or the Specifications;
- i. the Contractor's failure to notify the Architect of errors or inconsistencies between and among the Drawings and the Specifications;
- j. the Contractor's and/or its SubContractors' failure to comply with the requirements for maintaining record drawings;

- k. the Architect's or the Owner's discovery or observation of work which has been previously paid for by the Owner which is defective and/or incomplete;
- l. such other acts and/or omissions by the Contractor in connection with the performance of its work;
- m. the amount requested exceeds the percent completion of work on the site.

3. After any such adjustments are made to the Contractor's application for payment, the Contractor shall submit four (4) copies of the final draft of its application for payment to the Architect, which shall be accompanied by the following documentation:

- a. A current Contractor's lien waiver and duly executed and acknowledged sworn statement showing all SubContractors and material suppliers with whom the Contractor has entered into subcontracts, the amount of each such subcontract, the amount requested for any SubContractor and material suppliers in the requested progress payment and the amount to be paid to the Contractor from such progress payment, together with similar sworn statements from all such SubContractors and material suppliers;
- b. Duly executed waivers of public improvement liens from all SubContractors and material suppliers and lower tiered SubContractors or material suppliers establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or persons in any previous application for payment; and AIA Form G706 or G706A.
- c. Certified payroll for employees of the Contractor and employees of SubContractors performing work on the Project.
- d. Copies of invoices submitted to the Contractor by its SubContractors and/or material suppliers.
- e. Such other information which the Owner and/or the Architect request the Contractor furnish in connection with its application for payment, including but not limited to, Contractor change order log, Contractor submittal log and as built drawings to date.

4. Upon submission of its application for payment, the Contractor represents that it is entitled to payment in the amount for which it seeks payment.

5. In addition to the right to make adjustments to the amount the Contractor claims is due (as set forth in subparagraph 2 of this Paragraph D), the Owner may withhold payment

from the Contractor and the Architect may withhold certification for payment, if any of the reasons set forth in subparagraph 2 exist.

6. The Owner shall make payment to the Contractor within forty-five (45) days of receipt of the Contractor's requisition of payment unless such requisition of payment is not in accordance with the terms of the Construction Documents.

7. Upon receipt of payment by the Owner, the Contractor shall promptly make payment to each of its SubContractors and/or material suppliers for which it has received payment from the Owner. This provision does not obligate the Architect and/or the Owner to ensure payment to the Contractor's SubContractors and/or material suppliers.

- 8.
- a. In the event a subcontractor and/or material supplier files with the Owner a public improvement lien, the Owner shall withhold payment on previously certified applications for payment which have not yet been paid or subsequent applications for payment submitted by the Contractor an amount equal to one hundred fifty percent (150%) of the amount set forth in such public improvement lien. This provision is in addition to and does not supersede the indemnity provisions set forth in Article 12 of these General Conditions.
 - b. The Owner may release any payment withheld due to the filing of a public improvement lien if the Contractor obtains security acceptable to the Owner or a lien bond which is: (1) issued by a surety acceptable to the Owner; (2) in form and substance satisfactory to the Owner; and (3) in an amount not less the one hundred fifty percent (150%) of such lien claim. The cost of the premiums for any such bond posted shall be borne solely by the Contractor. By posting a lien bond or other acceptable security, however, the Contractor shall not be relieved of its obligations pursuant to these General Conditions, including but not limited to the indemnity provisions set forth in Article 12 of these General Conditions.

E.

1. The Contractor shall not be entitled to payment for materials and/or equipment stored off the site unless previously approved in writing by the Owner, and/or the Architect and upon the Contractor meeting any and all conditions which the Owner and/or the Architect may impose in connection with such materials and/or equipment, including but not limited to insurance for such materials and cost of storage and transportation associated with such materials and/or equipment. No payment will be made for "commodity type" stored materials such as block, studs, sheetrock, roofing, insulation, piping, fittings, conduit work, etc.

2. In connection with materials and/or equipment stored off the Project site, the Contractor must submit with its application for payment the following information:

- a. Type of material must be specifically identified by the Contractor;
- b. The Contractor must furnish an invoice from its supplier showing the total value of material and/or equipment being stored off site and must provide the bill of lading for such material and/or equipment;
- c. The Contractor must provide a Certificate of Insurance in a form approved by the Owner for the full value of the item plus 10%.
- d. The Contractor must execute a security agreement, together with an executed UCC-1 form;
- e. The materials must be stored in a bonded warehouse;
- f. The Contractor must furnish a bill of sale for stored material and/or equipment;
- g. The Contractor still has liability for all materials whether paid or not until installed.

3. Any and all materials and/or equipment for which the Contractor has been paid shall be titled in the Owner upon installation by the Contractor and shall be stored in a bonded facility. For payment to be made to the Contractor, the Contractor must provide the Owner with a waiver of lien and general release from its supplier in connection with its provisions of such materials and/or equipment. Notwithstanding payment by the Owner, any and all warranties and/or guarantees required to be provided shall not begin to run until the Contractor has completed all of its work.

4. Prior to payment by the Owner, the Contractor may be required to provide the Architect and the Owner with an opportunity to visually inspect the materials and/or equipment for the purpose of determining that such materials are in fact in storage, are the materials specified for the Contractor's work and for any other purpose which the Owner and/or the Architect deem necessary for payment to be made to the Contractor.

F. If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to its Agreement with the Owner, including but not limited to these General Conditions, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained herein to the contrary, if the Contractor fails to promptly make any payment due the Owner, or the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to: (1) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner; or (2) issue a written notice to the Contractor reducing the Contractor's contract sum by an amount equal to that which the Owner is entitled.

G. The Contractor may not assign any monies due or to become due to it pursuant to its Agreement with the Owner without the Owner's prior written consent. Any such assignment shall be in a form acceptable to the Owner. If the Contractor attempts to make such an assignment without such consent from the Owner, the Contractor shall nevertheless remain legally responsible for all obligations under its Agreement with the Owner.

H. Progress payments and all other payments shall be made in accordance with Section 106 (b) of the General Municipal Law.

I. At the same time the Contractor submits its insurance certificate to the Owner, it shall also submit to the Architect and the Owner the labor rates of each category of labor for which it and/or its SubContractors shall employ (either directly or indirectly).

This information shall be itemized in the format shown below:

Contractor's Name					
Contractor's Address					
Contractor's Office Phone					
Contractor's Fax Number					
Contractor's Email Address					
Labor Rate Breakdown					
Worker's Title		Journeyman	1.5 Rate	Foreman	1.5 Rate
Base Hourly Rate					
Payroll Tax & Insurance:	\$ Per Hr.				
FICA					
Federal Unemployment					
State					
Workers Compensation					
Disability					
Other (Explanation Required)					
Subtotal					
Benefits:	\$ Per Hr				
Vacation					
Health & Welfare					
Pension					
Annuity					

401K Fund					
Other (Explanation Required)					
Other Explanation Required)					
Subtotal					
Hourly Labor Rate					

ARTICLE 10 INSURANCE REQUIREMENTS

A. Within ten (10) days of the award of the bid, the Contractor, at its sole cost and expense, shall provide the Owner with the following insurance coverage whether the operations to be covered thereby are through the Contractor or by a SubContractor, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

The insurance required to be procured pursuant to this Article shall be purchased from and maintained by an insurance carrier licensed and admitted to do business in the State of New York, with an AM Best rating of A-, VIII, or better. The Contractor must submit the Certificate of Insurance to the Architect for the Owner's approval prior to the commencement of any work. EXCESS OR SURPLUS LINE INSURANCE CARRIERS WILL NOT BE ACCEPTED.

1. **Workers' Compensation, Paid Family Leave and NYS Disability Insurance**
Statutory Workers' Compensation (C-105.2 or U-26.3), NYS Paid Leave and NYS Disability Insurance (DB-120.1) for all employees. Proof of coverage must be on the approved specific form, as required by the New York State Workers' Compensation Board. ACORD certificates are not acceptable. A person seeking an exemption must file a CE-200 Form with the state. The form can be completed and submitted directly to the WC Board online.
2. **Commercial General Liability Insurance**
\$1,000,000 per Occurrence/\$2,000,000 aggregate
\$2,000,000 Products and Completed Operations
\$1,000,000 Personal and Advertising Injury
\$100,000 Fire Damage
\$10,000 Medical Expense
The general aggregate shall apply on a per-project basis.
3. **Owners Contractors Protective (OCP) Insurance:**
For Projects less than or equal to \$1,000,000 and work on 1 story (10 feet) only:
\$1,000,000 per occurrence, \$2,000,000 aggregate with the Owner as the named insured.

For Projects greater than \$1,000,000 and/or work above one story (10 feet): \$2,000,000 per occurrence, \$4,000,000 aggregate with the Owner as the named insured.

The Owner will be the named insured on OCP Policies. There will be no additional insureds on any OCP Policies.

4. **Automobile Liability**

\$1,000,000 combined single limit for owned, hired, borrowed and non-owned motor vehicles.

5. **Umbrella/Excess Insurance**

\$5,000,000 each occurrence and aggregate for general construction (including plumbing, electrical, and HVAC) and no work at elevation (<1 story or 10 feet) or Project values less than or equal to \$1,000,000.

\$10,000,000 each occurrence and aggregate for high-risk construction, work at elevation (>1 story or 10 feet) or Project values greater than \$1,000,000.

Umbrella/Excess coverage shall be on a follow-form basis or provide broader coverage over the General Liability and Automobile Liability coverages.

6. **Asbestos/Lead Abatement/Pollution Liability Insurance**

If the Project requires the removal of asbestos and/or hazardous materials, the Contractor shall provide hazardous material liability insurance as follows:

\$2,000,000 per occurrence/\$2,000,000 aggregate, including products and completed operations. Such insurance shall include coverage for the Contractor's operations including, but not limited to, removal, replacement, enclosure, encapsulation and/or disposal of asbestos, or any other hazardous material, along with any related pollution events, including coverage for third-party liability claims for bodily injury, property damage and clean-up costs. If a retroactive date is used, it shall pre-date the inception of the Contract.

If the Contractor is using motor vehicles for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage (ISO endorsement CA 9948 or CA 01 12), as well as proof of MCS 90. Coverage shall fulfill all requirements of this Article 10 and shall extend for a period of three (3) years following acceptance by the Owner of the Certificate of Completion.

7. **Testing Company Errors and Omission Insurance**

\$1,000,000 per occurrence/\$2,000,000 aggregate for the testing and other professional acts of the Contractor performed under the Contract with the Owner.

B. Notwithstanding any terms, conditions, or provisions, in any other writing between the parties, the Contractor hereby agrees to effectuate the naming of the Owner and the Architect as an additional insured on the Contractor's Commercial General Liability and Excess/Umbrella insurance policies.

1. The policies naming the Owner and the Architect as named insured or additional insured, as applicable, shall:

- a. be an insurance policy from an A.M. Best A- rated insurer, licensed and admitted to conduct business in New York State; and
- b. state that the coverage shall be primary and non-contributory coverage for the Owner, its Board, employees, and volunteers with a waiver of subrogation in favor of the Owner for all coverages including Workers Compensation.

2. Additional insured status for General Liability coverage shall be provided by standard or other endorsements that extend coverage to the Owner for on-going operations (CG 20 38 or equivalent) and products and completed operations (CG 20 37 or equivalent). The decision to accept an alternative endorsement rests solely with the Owner. A completed copy of the endorsement must be attached to the certificate of insurance to include General Liability, Automobile Liability and Umbrella/Excess coverages.

3. There will be no coverage restrictions and/or exclusions involving New York State Labor Law statutes or gravity-related injuries.

4. The certificate of insurance must describe all services provided by the Contractor (e.g., roofing, carpentry or plumbing) that are covered by the liability policies.

5. At the Owner's request, the Contractor shall provide a copy of the declaration page of the liability and excess policies with a list of endorsements and forms. If so requested, the Contractor will provide a copy of the policy endorsements and forms.

6. There will be no coverage restrictions and/or exclusions involving New York State Labor Law statutes or gravity-related injuries.

7. No policies containing escape clauses or exclusions contrary to the Owner's interests will be accepted.

8. The Contractor agrees to indemnify the Owner and the Architect for any applicable deductibles and/or self-insured retentions.

If written on a "claims-made" basis, the retroactive date must pre-date the inception of the Agreement. Coverage shall remain in effect for three (3) years following the completion of work. The Contractor shall also provide proof of Workers' Compensation and New York State Disability Benefits Insurance, Commercial General Liability and Excess Liability with limits of \$2,000,000 each occurrence and in the aggregate.

C. Coverages shall be maintained without interruption from the date of commencement of the work until the date of final payment and termination of any coverage required to be maintained after final payment.

D. The Contractor will be permitted to commence work on the Project with the insurance certificates currently on file with the Owner. On or before July 15 of each year, the Contractor will substitute said insurance certificates with insurance in strict compliance with Article 10. In addition to any other rights or remedies that the Owner may have in law, equity or pursuant to the General Conditions of Construction set forth in the Agreement between the Owner and the Contractor, in the event the Contractor fails to provide evidence of the insurance required by Article 10 by July 15, the Owner shall assess liquidated damages of \$1,000.00 for every day the Contractor fails to meet the requirements for insurance as set forth in Article 10 through final completion of the Project or the date the required insurance is submitted, whichever is earlier.

E. All insurance coverage to be provided by the Contractor, pursuant to paragraph A of this Article 10, shall include a cancellation notice to the Owner pursuant to the policy terms and conditions. All insurance coverage to be provided by the Contractor shall name the Owner and the Architect as additional insureds on the policy, with the exception of Owners Contractors Policies. Additionally, the insurance coverage to be provided by the Contractor, pursuant to paragraph A of this Article 10, shall state that the Contractor's coverage shall be the primary and non-contributory coverage for the Contractor's work. A fully completed New York Construction Certificate of Liability Insurance Addendum (ACCORD 855 2014/15) must be included with the certificates of insurance. For any "Yes" answers on Items A through L on this Form -- additional details must be provided in writing. Policy exclusions may not be accepted.

F. The Contractor acknowledges that its failure to obtain or keep current the insurance coverage required by paragraph A of this Article 10 shall constitute a material breach of Contract and subjects the Contractor to liability for damages, including but not limited to direct, indirect, consequential, special, and such other damages the Owner sustains as a result of such breach. In addition, the Contractor shall be responsible for the indemnification to the Owner and the Architect of any and all costs associated with such lapse in coverage, including but not limited to reasonable attorney's fees.

G. In the event that any of the insurance coverage to be provided by the Contractor to the Owner contains a deductible, or a self-insured retention, or the insurance provided by the Owner

contains a deductible, the Contractor shall indemnify and hold the Owner and the Architect harmless from the payment of such deductible or self-insured retention, which deductible shall in all circumstances remain the sole obligation and expense of the Contractor. The failure of the Owner or Architect to object to the contents of the certificate or the absence of same shall not be deemed a waiver of any rights held by the Owner.

H. SubContractors are subject to the same terms and conditions as stated above and must submit same to the Owner for approval prior to the start of any work. In the event the Contractor fails to obtain the required certificates of insurance from the SubContractor and a claim is made or suffered, the Contractor shall defend, indemnify, defend, and hold harmless the Owner and the Architect, Engineers, Consultants, and Sub-consultants and their officers, members of the Board, agents or employees from any and all claims for which the required insurance would have provided coverage. This indemnity obligation is in addition to any other indemnity obligation provided in the Contract.

I. The Contractor assumes responsibility for all injury or destruction of the Contractor's materials, tools, machinery, equipment, appliances, shoring, scaffolding, false and form work, and personal property of the Contractor's employees from whatever cause arises. Any policy of insurance secured covering the Contractor or SubContractors leased or hired by them and any policy of insurance covering the Contractor or SubContractors against physical loss or damage to such property shall include an endorsement waiving the right of subrogation against the Owner for any loss or damage to such property.

J. The Owner in good faith may adjust and settle a loss with the Contractor's insurance carrier.

K. The Owner and the Contractor waive all rights against each other and any of their SubContractors, Sub-SubContractors, agents, and employees for damages caused by fire or other perils to the extent of actual recovery of any insurance proceeds under any property insurance policy procured, pursuant to paragraph A of this Article 10, or other property insurance applicable to the Contractor's work.

L. Before commencement of its work, the Contractor shall obtain and pay for such insurance as may be required to comply with the indemnification and hold harmless provisions outlined under Article 12 of these General Conditions of the Contract for Construction.

M. If the terms of policies expire, or the lives of the insurance companies terminate, before the Contract is completed or during the period of completed operations coverage, and the Contractor fails to maintain continuance of such insurance, the Owner is entitled to provide protection for itself, to pay premiums, and to charge the cost to the Contractor.

ARTICLE 11
REQUIRED BONDS FOR THE PROJECT

- A. Within ten (10) days of the award of the bid, the Contractor shall furnish a Performance Bond, Labor and Material Payment Bond and Maintenance Bond (to be in effect during the warranty period) meeting all statutory requirements of the State of New York.
- B. All Surety companies are subject to the approval of the Owner and may be rejected by the Owner without cause.
- C. Except as otherwise required by statute, the form and substance of such bonds shall be satisfactory to the Owner in the Owner's sole judgment.
- D. Bonds shall be executed by a responsible surety licensed to do business in New York with an A.M. Best Rating of "A-" or better as to Policy Holder Ratings, and "VIII" or better as to "Financial Size Category." Such bonds shall remain in effect for a period not less than three (3) years following final completion of the work by the Contractor.
- E. Bonds shall further be executed by a surety that is currently listed on the U.S. Treasury Department Circular 570 entitled "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies," as amended.
- F. The Performance Bond and the Labor and Material Payment Bond shall each be in an amount equal to one hundred percent (100%) of the Contract Sum. The value of each bond shall be adjusted during the Project construction period to reflect changes in the Contract Sum.
- G. Every Bond must display the Surety's Bond Number.
- H. Each bond must be accompanied by an original Power of Attorney, giving the names of Attorneys-in-fact, and the extent of their bonding capacity.
- I. A rider including the following provisions shall be attached to each Bond:
1. Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change, or other modification of the Contract Documents. Such addition, alteration, change, extension of time, or other modification of the Contract Documents, or a forbearance on the part of either the Owner or the Contractor to the other, shall not release the Surety of its obligations hereunder and notice to the Surety of such matters is hereby waived.
 2. Surety further agrees that in event of any default by the Owner in the performance of the Owner's obligations to the Contractor under the Contract, the Contractor or Surety shall cause written notice of such default (specifying said default in detail) to be given to the Owner, and the Owner shall have thirty (30) days from time after receipt of such notice within which to cure such default, or such additional reasonable period of time as may be required if the nature

of such default is such that it cannot be cured within thirty (30) days. Such Notice of Default shall be sent by certified or registered U.S. Mail, return receipt requested, first class postage prepaid, to Lender and the Owner.

3. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within three (3) years after termination by the Owner of the Contractor's contract or within three years after final completion by the Contractor. In the event the Contractor files for bankruptcy, the commencement of the three-year period shall not start to run until the bankruptcy proceeding is finalized or the Owner obtains relief from an automatic stay, whichever is later.

J. The Contractor shall deliver the required bonds to the Owner prior to beginning construction activity at the site, but no later than ten (10) days of issue date of Notice of Award of Contract. Said bonds shall be in the form set forth in the Project Manual. No work shall be performed by the Contractor until such bonds have been reviewed and approved.

K. The Owner may, in the Owner's sole discretion and without prior notice to the Contractor, inform surety of the progress of the Contractor's work and obtain consents as necessary to protect the Owner's rights, interest, privileges and benefits under and pursuant to any bond issued in connection with the Contractor's work.

L. If the surety on any bond furnished by the Contractor is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of this Article, the Contractor shall within ten (10) days thereafter substitute another Performance and Payment Bond and surety, both of which must be acceptable to the Owner.

ARTICLE 12 INDEMNIFICATION

A. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board of Education and agents; and (2) the Architect and its consultants, employees, officers and agents; from and against any and all claims, damages, losses, suits, obligations, fines, penalties, costs, charges, and expenses, including but not limited to attorney's fees, which may be imposed upon or incurred by or asserted against any of them by reason of any act or omission of such contractor or any of its subcontractors or any person or firm directly or indirectly employed by such contractor, for the act(s) and/or omission(s) of any contractor or subcontractor in connection with the work of the Project.

B. To the fullest extent permitted by law, the Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board of Education, and agents; and (2) the Architect and its consultants, employees, officers, and agents from and against claims, damages, losses, and expenses, including but not limited to

attorney's fees, arising out of or resulting from performance of its work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction, of tangible property including loss of use resulting therefrom, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a SubContractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph B. The Contractor's indemnity obligations under this Paragraph B shall, but not by way of limitation, specifically include all claims and judgments which may be made against the Owner, the Architect, the Architect's consultants and agents and employees of any of them under any applicable statute, rule or regulation including the New York Statute, Occupational Safety and Hazardous Act, and the Federal Occupational Safety and Hazardous Act. In claims against any person or entity indemnified under this Paragraph B by an employee of the Contractor, a SubContractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph B shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a SubContractor under workers' or workmen's compensation acts, disability benefit acts, or other employee benefit acts.

C. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board of Education, and its agents; and (2) the Architect and its consultants, employees, officers, and agents from and against any fines, penalties, judgments, or damages, including reasonable attorney's fees, imposed on or incurred by the parties indemnified hereunder which are incurred as a result of the Contractor's failure to give the notices required by Article 6(T) of these General Conditions of the Contract for Construction.

D. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board of Education and agents; and (2) the Architect and its consultants, employees, officers and agents from and against any actions, lawsuits or proceedings or claims of liens brought against each or any of them as a result of liens filed against the Contractor's Project funds, including all the cost and expense of said liens, and including but not limited to attorney's fees incurred by each or any of them.

E. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board of Education and agents; and (2) the Architect and its consultants, employees, officers, and agents from and against any and all liability for violation of all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies applicable to the Contractor's work and shall defend any claims or actions which may be brought against the Owner as the result thereof.

F. The Contractor and its SubContractors shall defend, indemnify and hold harmless: (1) the Owner, its consultants, employees, officers, members of the Board of Education and agents; and

(2) the Architect and its consultants, employees, officers and agents from and against any and all liability for claims made by third parties, including SubContractors, in connection with this Agreement and shall defend any claims or actions which may be brought against the Owner as the result thereof.

G. The Contractor shall defend, indemnify and hold harmless (1) the Owner, its consultants, employees, officers, members of the Board of Education and agents; and (2) the Architect and its consultants, employees, officers and agents from and against any and all claims, damages, losses, suits, obligations, fines, penalties, costs, charges, and expenses which may be imposed upon or incurred by or asserted against any of them by reason of any act or omission of such contractor or any subcontractor or any person or firm directly or indirectly or indirectly employed by such contractor, with respect to violations of OSHA requirements, rules, and/or regulations.

H. The indemnification obligations set forth herein shall become effective upon the Owner's or the Architect's receipt of a claim for which the Contractor is required to provide indemnification to the Owner or the Architect. In the event that the Contractor shall fail to refuse to defend any such action, the Contractor shall be liable to the Owner for all costs of the Owner in defending such claim or action and all costs of the Owner, including attorney's fees, in recovering such defense costs from the Contractor. In the event the Owner or the Architect is required to bring an action to enforce the indemnification obligation, the Contractor shall be liable to the Owner and/or the Architect for all costs associated with said action including attorney's fees.

ARTICLE 13 TIME FOR COMPLETION OF WORK

A. The date of commencement of the Contractor's work shall be as indicated in the Agreement between the Contractor and the Owner. The date shall not be postponed or extended by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible to act. Time limits stated in the Agreement between the Owner and the Contractor are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

B. The Contractor shall not commence work on the site until two certified copies of all insurance policies and bonds required by Articles 10 and 11 of these General Conditions are provided to the Owner and accepted by the Owner. The date of commencement and/or completion of the Contractor's work shall not be changed by the effective date of such insurance. The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the acceptance of the insurance and bonds required by Article 10 and Article 11 of these General Conditions.

C. The Contractor shall proceed expeditiously with adequate forces and shall achieve substantial completion of the work in accordance with the schedule set forth in the Agreement.

The Contractor shall cooperate with the Owner, the Architect, and other contractors on the Project, making every reasonable effort to reduce the contract time.

D.

1. In the event the Owner determines that the performance of the Contractor's work, as of a milestone date, has not progressed or reached the level of completion required by its contract, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation: (1) working additional shifts or overtime; (2) supplying additional manpower, equipment, facilities; and/or (3) other similar measures (hereinafter referred to collectively as "Extraordinary Measures"). Such Extraordinary Measures shall continue until the Contractor progresses its work in compliance with the stage of completion required by the Agreement with the Owner. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule.

2. The Contractor shall not be entitled to an adjustment in its contract sum in connection with Extraordinary Measures ordered by the Owner under or pursuant to Paragraph D(1).

3. The Owner may exercise the rights furnished the Owner under or pursuant to Paragraph D(1) as frequently as the Owner deems necessary to ensure that the Contractor's performance of its work will comply with any Milestone Date or completion date set forth in the Contractor's Agreement with it.

4. The Owner reserves the right to withhold payment from the Contractor until such time as the Contractor submits a daily schedule showing work to be again on schedule with the Construction Schedule and/or until its work is being installed according to the Project construction schedule, without additional cost to the Owner.

E. The Contractor shall achieve substantial completion of its work in accordance with the schedule for the work set forth in the Project Manual included as part of the Agreement with the Owner. Milestone Dates are dates critical to the Owner's operations that establish when a part of the work is to commence or be complete. All Milestone Dates are of the essence and shall have the same meaning as Substantial Completion for the purpose of Liquidated Damages in this Article 13.

F. Substantial completion shall be achieved by the Contractor when the Contractor has completed ninety-eight (98%) percent of its work. Work remaining to be completed after substantial completion shall be limited to items which can ordinarily be completed within the period between the payment at the time of substantial completion and final payment.

G.

1. The Project is to be physically completed in accordance with the time limits set forth in the Agreement between the Owner and the Contractor and as further set forth in the

Project Manual and/or bidding documents. Liquidated damages will be assessed in the amount of One Thousand (\$1,000.00) Dollars for each and every calendar day after such time allowed for completion.

2. The Contractor realizes that time is of the essence on this Contract and the completion date and milestone date for each work item in its Agreement, a Milestone Date reflected on the Project schedule, or the date of substantial completion of the Contractor's work shall be no later than the date indicated therein. In the event the Contractor fails to complete any work or substantially complete the work under this contract by said schedule date, the sum per calendar day for each date not met, as delineated above, will be subtracted from the payment due the Contractor (or, if the amount due the Contractor as payment is insufficient, any deficiency shall be paid by the Contractor to the Owner), except in cases where the Contractor has applied for and been granted an extension of time in accordance with the provisions of this Article 13.

3. The said sum per calendar day shall constitute the Liquidated Damages incurred by the Owner for each day of delay beyond the agreed upon dates of substantial completion. Such Liquidated Damages shall be in addition to any other damages (other than by reason of delay) the Owner may incur as a result of the Contractor's breach of Contract. In the event that substantial completion of its work is not achieved in accordance with the Project schedule, inspections will be performed once each week unless the Owner or the Architect determines, at their sole discretion, that additional inspections are not needed. All costs incurred by the Owner, and the Architect and the cost of additional inspections, at the rate of One Thousand Dollars (\$1,000.00) per inspection, will be subtracted from payment due the Contractor. If the amount due the Contractor for payment is insufficient, any deficiency shall be paid by the Contractor to the Owner.

H.

1. Within five (5) calendar days from the occurrence of same, the Contractor must apply in writing to the Owner or the Architect for an extension of time to complete its work where it has been delayed as a result of: unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including acts of God, acts of the public enemy, acts of the federal or state government in either their sovereign or contractual capacities, fires, floods, epidemics, quarantine restrictions, priority or allocation orders duly issued by the federal government; and/or freight embargoes. The Contractor may not apply for an extension of time for delays in acquisitions of materials other than by reason of freight embargoes. All other delays of the Project, including but not limited to, the Architect's review and/or approval of shop Drawings and/or submittals, requests for information, clarifications, samples, and change orders; Owner schedule; Architect certification of payment; payment by the Owner of the Contractor's application for payment; coordination amongst contractors; unavailability of materials and/or equipment; surveying/testing; closeout, etc. are deemed to be foreseeable and, therefore shall not form the basis for a claim for an extension of time by the Contractor.

2. All claims for additional time shall be supported by documentation which demonstrates to the Architect's satisfaction that the critical path of the Work has been

significantly altered by the delays to the activities in question, and that the schedule cannot be maintained by re-ordering other activities within the Project at no cost. Upon receipt of the Contractor's request for an extension of time, the Owner will ascertain the facts and extent of the delay, and may, in its sole discretion, extend the time for completion of the Contractor's work when in its judgment such an extension is justified. The Owner's determination will be final and binding in any litigation commenced by the Contractor against the Owner which arises out of the Owner's denial of an extension of time to the Contractor. Any approval of an extension of the Contractor's time to complete its work shall be memorialized by written change order, signed by the Owner, the Contractor, and the Architect. Where the Owner determines that the Contractor will be granted an extension of time, such extension shall be computed in accordance with the following:

For each day of delay in the completion of its work, the Contractor shall be allowed one day of additional time to complete its contract. The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently; only the actual period of delay as determined by the Owner or its Architect may be allowed.

3. The Owner reserves the right to delay the commencement of Work or to otherwise modify the construction schedule set forth in the bid documents in order to comply with applicable federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies related to the COVID-19 pandemic. Contractor's remedies for any schedule modifications or delays caused directly or indirectly by the COVID-19 pandemic shall be an extension of time only, as further delineated in Article 13 (H)(4), below.

4. Notwithstanding anything to the contrary in the Contract Documents, an extension in the contract time, to the extent permitted under this Article 13(H), shall be the sole remedy of the Contractor for any: (1) delay in the commencement, prosecution, or completion of the Work; (2) hindrance or obstruction in the performance of the Work; (3) loss of productivity or acceleration; or (4) other similar claims (collective referred to herein as "delay(s)"), unless a delay is caused by the Owner's active interference with the Contractor's performance of the Work, and only to the extent such acts continue after the Contractor furnishes the Owner with three (3) days' written notice of such interference. In no event shall the Contractor be entitled to any compensation or recovery of any damages in connection with any delay, including, but not limited to, consequential damages, lost opportunity costs, impact damages, or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including, but not limited to, ordering changes in the Work, or directing suspension, rescheduling or correction of the Work), regardless of the extent or frequency of the Owner's exercise of such rights or remedies, shall not be construed as active interference with the Contractor's performance of the Work.

ARTICLE 14
DEFICIENT AND INCOMPLETE WORK

A. The Owner, through the Architect, will have the authority to reject work performed by the Contractor which does not conform to the requirements of the Drawings and/or the Specifications.

B. The Owner, through the Architect, shall have the authority to require additional inspection or testing of the Contractor's work whether or not such work is fabricated, installed, or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, its SubContractors, material and equipment suppliers, their agents, or employees, or other persons performing portions of the work to have performed additional inspection or testing of the work.

C.

1. If a portion of the Contractor's work is covered contrary to the Architect's request or to requirements specifically expressed in the Drawings and/or the Specifications, upon request by the Architect, the Contractor shall uncover such work for the Architect's or any governmental authority's observation and be replaced at the Contractor's sole expense without change in the Contract Time or Contract Sum.

2. If a portion of the Contractor's work has been covered which the Architect or any governmental authority has not specifically requested to observe prior to its being covered, the Architect or any governmental authority may request to see such work and it shall be uncovered by the Contractor. If such work is in accordance with the Drawings and/or the Specifications, costs of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work is not in accordance with the Contract Documents, the Contractor, at its sole cost and expense, shall uncover and replace such work.

D. The Contractor shall promptly correct work rejected by the Owner, through the Architect, which fails to conform to the requirements of its contract with the Owner, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. The Contractor shall bear the all costs of correcting such rejected work, including but not limited to the cost of said additional testing and/or inspection, the cost of the Architect's services incurred in conjunction with such additional testing, and any cost, loss or damages to the Owner resulting from such actions. If prior to the date of Substantial Completion, the Contractor, a SubContractor or anyone for whom either is responsible uses or damages any portion of the Work or premises, including, without limitation, mechanical, electrical, plumbing and other building systems, machinery, equipment or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner.

E. If the Contractor: (1) fails to correct work which is not in accordance with the requirements of its Agreement with the Owner; or (2) fails to carry out its work in accordance with the

requirements of its Agreement with the Owner; or (3) fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the work within the contract time; or (4) fails to remove and discharge (within ten (10) days) any lien filed upon the Owner's property by anyone claiming by, through, or under the Contractor; or (5) disregards the instructions of the Architect or the Owner, the Architect, on behalf of the Owner may order the Contractor to stop its work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity. This right shall be in addition to, and not in restriction of, other rights the Owner may have pursuant to these General Conditions or at law.

F.

1. If the Contractor defaults or neglects to carry out its work in accordance with its Agreement with the Owner and fails within a three (3) day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Architect and the Owner and such other consultants whose participation is deemed necessary by the Architect, for additional services and expenses made necessary by such default, neglect, or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

2. Where the Contractor's default and/or neglect to carry out its work in accordance with its Agreement with the Owner threatens the health, safety and/or welfare of the occupants of the School District's facilities and/or threatens the structural integrity and/or preservation of the School District's facilities, the Owner may proceed to carry out the Contractor's work upon twenty-four (24) hours' notice of its intention to do so to the Contractor.

G. If the Owner prefers to accept work which is not in accordance with the terms and conditions of the Agreement between the Owner and the Contractor, the Owner may, in its discretion, accept such work and reduce the Contractor's contract sum accordingly.

ARTICLE 15 FINAL COMPLETION AND CLOSEOUT OF THE PROJECT

A.

1. When advised by the Owner that the Contractor's work is near substantial completion, the Architect shall visit the site to determine whether the Contractor's work is substantially complete. If the Architect's observations of the Contractor's work discloses any item which has not been performed in accordance with the requirements of the Drawings and/or the Specifications and/or which has not been completed to the point indicated in Article 13(F) of these General Conditions, the Contractor shall complete or correct such items upon receipt of notification from the Architect that a deficiency exists. The Architect shall not issue a certificate

of substantial completion for the work of the Contractor until the work has been completed in accordance with Article 13(F). Upon completion of the work outlined by the Architect to it in accordance with this paragraph A(1), the Contractor shall advise the Architect of the need for an inspection of the work. If the Architect is required to inspect the Contractor's work more than twice, the Contractor shall be liable to the Owner for cost of the services performed by the Architect or the Owner as a result of additional inspections.

2. Upon determining that the Contractor's work has progressed to the point of Substantial Completion, the Architect shall prepare a punch list of the Contractor's work which shall include only minor items of work remaining to be performed by the Contractor to bring its work into compliance with the requirements of the Drawings and/or the Specifications. The Contractor shall proceed promptly to complete and correct items on the punch list issued by the Architect and shall complete said items within thirty (30) days of its receipt of the punch list from the Architect. At the time of substantial completion, the Owner shall retain two hundred percent (200%) of the value of the punch list items from the Contractor's remaining contract sum. The value of said remaining work shall be determined by the Architect. Upon completion of the work reflected in the final punch list, the Owner shall release the monies withheld pursuant to this paragraph to the Contractor.

3. The Architect's failure to include an item of deficiency on the punch list issued to the Contractor shall not relieve the Contractor of its responsibility to perform its work in accordance with the Drawings and/or the Specifications.

B.

1. If within three (3) years after the date of Substantial Completion of the Contractor's work or designated portion thereof, or after the date for commencement of warranties established pursuant to these General Conditions, or by terms of in applicable special warranty required by the Agreement between the Owner and the Contractor, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner, unless the Owner has previously given the Contractor a written acceptance of such condition. This period of three (3) years shall be extended with respect to portions of the Contractor's work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of such work. The obligation set forth hereunder shall survive acceptance by the Owner of the Contractor's and/or termination of the Contractor's Agreement with the Owner. The Owner shall give such notice within a reasonable period of time after discovery of the condition.

2. The Contractor shall, within a reasonable time after receipt of written notice thereof, but in no event no later than seventy-two (72) hours after receipt of such notice, commence to correct, repair, and make good any defects in its work.

3. The obligations of the Contractor pursuant to this paragraph shall cover any repairs to or replacement of work affected by the defective work.

4. In the case of any work performed in correcting defects pursuant to this paragraph, the guarantee periods specified herein shall begin anew from the date of acceptance by the Owner of such work.

C. Upon receipt of written notice from the Owner that the Contractor's work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Contractor's work acceptable pursuant to the terms and conditions of its Agreement with the Owner and the Contract fully performed and upon receipt of the closeout documentation required by the Contract Documents and elsewhere in the Agreement between the Owner and the Contractor, the Architect will certify to the Owner that the Contractor is entitled to final payment on the Project.

D.

1. Prior to receipt of final payment from the Owner, the Contractor shall provide to the Architect the close out documentation required by the Contract Documents.

2. The Contractor shall schedule a close out meeting with the Architect and the Owner for the purpose of delivering the close out documents required pursuant to the Contract Documents and elsewhere in the Agreement between the Owner and the Contractor.

E. If the Contractor's work is not accepted by the Owner after final inspection and additional time is required to complete items identified during the final inspection, the date starting the warranty periods described in the Contract Documents shall be set by the Architect at his discretion.

F. If the Architect is required to perform more than one final inspection because the Contractor's work fails to comply with the requirements of the contract, the amount of compensation paid to the Architect by the Owner for additional services shall be deducted from the final payment to the Contractor.

G. Acceptance of final payment by the Contractor, a SubContractor or material supplier shall constitute a waiver of claims by that payee except those claims previously made in writing in accordance with the terms of Article 18 hereof and identified by that payee as unsettled at the time of final Application for Payment.

H. The Contractor shall submit all documentation identified in this section within ninety (90) days from the date of Substantial Completion. If the documentation has not been submitted, the Owner will obtain same through whatever means necessary. The Contractor shall solely be responsible for all expenses incurred by the Owner in securing such documentation.

ARTICLE 16
RELEVANT STATUTORY PROVISIONS

A. The Contractor shall at all times observe and comply with all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies, in any manner affecting the work and all such orders decreed as exist at present and those which may be enacted later, by bodies or tribunals having jurisdiction or authority over the work, and in addition to any other indemnification set forth herein, the Contractor shall indemnify and save harmless the Owner, and its officers, members of the Board, agents, or servants against any claim or liability arising from, or based on, a violation of any such law, ordinances, regulation, order, or decree, whether by its or by its employees or agents.

B. The Contractor and each of its SubContractors shall comply with prevailing wage rates as issued by the of New York State Department of Labor for the location and duration of the Project and shall comply with all requirements governing its payments to its employees as set forth in Labor Law, section 220, *et seq.* of the New York State Labor Law.

C. The Contractor and each of its SubContractors shall post a notice at the beginning of the performance of every public work contract on each job site that includes the telephone number and addresses for the Department of Labor and a statement informing laborers, workers, or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her particular job classification.

D. The Contractor specifically agrees, as required by Labor Law, Sections 220 and 220-d, as amended, that:

1. No laborer, workman or mechanic in the employ of the Contractor, SubContractor or other person doing or contracting to do the whole or any part of the work contemplated by the Contract, shall be permitted or required to work more than eight hours in any one calendar day or more than five days in any one week, except in the emergencies set forth in the Labor Law.

2. The wages paid for a legal day's work shall not be less than the prevailing rate of wages as defined by law.

3. The minimum hourly rate of wages to be paid shall not be less than that stated in the Project Manual, and any re-determination of the prevailing rate of wages after the Contract is approved shall be deemed to be incorporated herein by reference as of the effective date of re-determination and shall form a part of this Contract. The Labor Law provides that the Contract may be forfeited and no sum paid for any work done thereunder on a second conviction for willfully paying less than:

- a. the stipulated wage scale as provided in Labor Law, Section 220, Subdivision 3, as amended; or

- b. the stipulated minimum hourly wage scale as provided in Labor Law, Section 220-d, as amended.

E. The Contractor specifically agrees, as required by the provisions of the Labor Law of New York, Section 220-E, as amended that:

1. In the hiring of employees for the performance of this contract or any subcontractor hereunder, no contractor, subcontractor, nor any person acting on behalf of such contractor or sub-contractor shall by reason of sex, race, creed, color, disability, or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates.

2. No contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, color, creed, sex, disability, or national origin.

3. There may be deducted from the amount payable to the Contractor a penalty of fifty dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the Contract.

4. This Contract may be canceled or terminated by the Owner and all monies due or to become due hereunder may be forfeited for a second or any subsequent violation of the terms or conditions of this section of the Contract.

F. The Contractor shall comply with all of the provisions of the Immigration Reform and Control Act of 1986 and regulations promulgated pursuant thereto and shall require its SubContractors to comply with same. In addition to the other indemnification obligations set forth herein, the Contractor shall and does hereby agree to defend, indemnify, and hold harmless the Owner, the Owner's agents, officers, members of the Board, and its employees from and against any penalties, fees, costs, liabilities, suits, claims, or expenses of any kind or nature, including reasonable attorney's fees, arising out of or resulting from any violation or alleged violation of the provisions of said laws in connection with the work performed hereunder.

G. This Contract shall be void if the Contractor fails to install, maintain, and effectively operate appliances and methods for the elimination of harmful dust when a harmful dust shall have been identified in accordance with Section 222-a of the Labor Law of the State of New York.

H. The Contractor shall ensure that absolutely no asbestos containing material is used in conjunction with the performance of its work. The Contractor bears the sole responsibility to provide assurances that no asbestos containing material is built into the construction, or that any equipment used in the construction contains any asbestos containing material. If asbestos containing material is found, at any time during or after the construction is completed, it shall be

the responsibility of the Contractor who installed said material to remove it and replace it with new non-asbestos containing material, as per federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies.

I. Large and small asbestos abatement projects as defined by 12 N.Y.C.R.R. 56 shall not be performed while the building is occupied. As referenced in this section, the term "building" shall mean a wing or major section of a building that can be completely isolated from the rest of the building with sealed non-combustible construction. The isolated portion of the building must contain exits that do not pass through the occupied portion, and ventilation systems must be physically separated and sealed at the isolation barrier. Exterior work such as roofing, flashing, siding, or soffit work may be performed on occupied buildings provided proper variances are in place as required, and complete isolation of ventilation systems and windows is provided. Work must be scheduled so that classes are not disrupted by noise or visual distraction.

J. Surfaces that will be disturbed by reconstruction must have a determination made as to the presence of lead. Projects which disturb surfaces that contain lead shall have in the Specifications a plan prepared by a certified Lead Risk Assessor or Supervisor which details provisions for occupant protection, worksite preparation, work methods, cleaning, and clearance testing which are in general accordance with the HUD Guidelines.

K. As set forth in Article 4(M), no smoking is allowed anywhere on school property per New York State and County law. Violators are subject to a \$1,000.00 fine and/or banishment from the property.

L. Applicable codes and standards for material furnished and work installed shall include all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies of public authorities or governmental agencies having jurisdiction, and applicable requirements of following codes and standards, including but not limited to:

1. New York State Uniform Fire Prevention and Building Code, and amendments thereto.
2. New York State Energy Conservation Construction Code.
3. State Education Department Manual of Planning Standards.
4. New York State Department of Transportation, Office of Engineering, Standard Specification, Construction and Materials, latest edition.
5. Life Safety Code - NFPA.

M. Wherever in the Specifications reference is made to ANSI or ASTM Standards, Federal Specifications, Consumer Product Standards, or similar recognized standards, the latest edition of the respective publishing agency in effect at the date of "Bid Issuance" shall be accepted as establishing the technical requirements for which compliance is required.

N. The Owner shall be entitled to request that the Contractor or its successor in interest adequate assurance of future performance in accordance with the terms and conditions of its Agreement in the event: (1) an order for relief is entered on behalf of the Contractor pursuant to Title 11 of the United States Code; (2) any other similar order is entered under any other debtor relief laws; (3) the Contractor makes a general assignment for the benefit of its creditors; (4) a receiver is appointed for the benefit of its creditors; or (5) a receiver is appointed on account of its insolvency. Failure to comply with such request within ten (10) days of delivery of the request shall entitle the Owner to terminate the Contract in accordance with Article 17 hereof. In all events, pending receipt of adequate assurance of performance and actual performance in accordance therewith, the Owner shall be entitled to proceed with the Contractor's work with its own forces or with other contractors on a time and material or other appropriate basis, the cost of which will be back charged against the Contractor.

O. The Contractor shall maintain policies of employment as follows:

1. The Contractor and the Contractor's SubContractor shall not discriminate against any employee or applicant for employment because of race, creed, color, disability, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their age, race, creed, color, national origin, citizenship or immigration status, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, marital status, familial status, status as a victim of domestic violence, pregnancy-related condition, prior arrest or conviction record, or political opinion or affiliation. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

2. The Contractor and the Contractor's SubContractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, citizenship or immigration status, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, marital status, familial status, status as a victim of domestic violence, pregnancy-related condition, prior arrest or conviction record, or political opinion or affiliation.

3. The Contractor and the Contractor's SubContractors shall certify under penalty of perjury, that:

- a. it is registered with the New York State Department of Labor pursuant to Section 220-i of the New York Labor Law; and
- b. each of the subcontractors engaged by the Contractor for this Project are also registered.
- c. The Contractor shall include with its certification, a copy of the Certificate(s) of Registration issued by the Commissioner of the Department of Labor for the Bidder and each of its subcontractor(s).

ARTICLE 17 TERMINATION OR SUSPENSION

A.

1. The Owner may terminate the Contractor's Agreement in the event the Contractor:
 - a. refuses or fails to supply sufficient skilled workers or suitable materials or equipment to complete the Work in a diligent, efficient, timely, workmanlike, skillful, and careful manner;
 - b. refuses or fails to correct deficient work performed by it;
 - c. fails to make prompt payments to SubContractors for labor, materials, and/or equipment in accordance with the respective agreements between the Contractor and the SubContractors;
 - d. disregards all federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies of public authorities or governmental agencies having jurisdiction;
 - e. disregards the instructions of the Architect or the Owner (when such instructions are based on the requirements of the Contract Documents);
 - f. is adjudged a bankrupt or insolvent, or makes a general assignment for the benefit of the Contractor's creditors, or a trustee or receiver is appointed for the Contractor or for any of its property, or files a petition to take advantage of any debtor's act or to reorganize under bankruptcy or similar laws; or
 - g. breaches any warranty made by the Contractor under or pursuant to the Contract Documents.

- h. fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with all the requirements of the Contract Documents; or
- i. fails after commencement of the Work to proceed continuously with the construction and completion of the Work for more than ten (10) days, except as permitted under the Contract Documents.
- j. fails to keep the Project free from strikes, work stoppages, slowdowns, lockouts or other disruptive activity;
- k. or otherwise does not fully comply with the Contract Documents.

2. When any of the above reasons exists, the Owner may, without prejudice to any other rights or remedies, terminate employment of the Contractor upon three (3) days written notice and may, subject to any prior rights of the surety:

- a. take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- b. take possession of materials stored off site by the Contractor;
- c. take assignments of the Contractor's SubContractors in accordance with these General Conditions;
- d. finish the Work by whatever reasonable method the Owner may deem expedient.

3. When the Owner terminates the Contract for one of the reasons stated in Article 17(A)(1), the Contractor shall not be entitled to receive further payment until the completion of the Contractor's work. If the Owner's costs to complete the Contractor's work, including the expenses incurred by the Owner in connection with the services of the Architect and/or other consultants, exceed the contract balance remaining on the Contractor's contract, the Contractor shall be liable to the Owner for such excess costs. This provision shall survive termination of the Contractor's Agreement with the Owner.

B.

1. In addition to the Owner's right to carry out the work of the Contractor pursuant to the Agreement with the Contractor, the Owner may at any time, at will and without cause, terminate any part of the Contractor's work or all of the Contractor's remaining work for any reason whatsoever by giving three (3) days' written notice to the Contractor, specifying the portion of the Contractor's work to be terminated and the effective date of termination.

2. Upon receipt of a notice of termination for convenience, the Contractor shall immediately, in accordance with instructions from the Owner, proceed with performance of the following duties regardless of delay in determining or adjusting amounts due it:

- a. Cease operation as specified in the notice.
- b. Place no further orders and enter into no further subcontracts for materials, labor, services, or facilities except as necessary to complete continued portions of the Contract.
- c. Terminate all subcontracts and orders to the extent they relate to the Work terminated.
- d. Proceed to complete the performance of the remaining work on its contract which has not been so terminated.
- e. Take actions that may be necessary, or that the Owner may direct, for the protection and preservation of the terminated Work.

3. The Contractor shall continue to prosecute that portion of its work which has not been terminated by the Owner pursuant to this paragraph. If the Contractor's work is terminated, the Owner shall not be liable to the Contractor by reason of such termination, except that the Contractor shall be entitled to payment for the work it has properly executed in accordance with the Agreement and prior to the effective date of termination (the basis for such payment shall be as provided in the Contract) and for costs directly related to work thereafter performed by the Contractor in terminating such Work, provided such work is authorized in advance by the Architect and the Owner in writing. No payment shall be made by the Owner, however, to the extent that such work is, was, or could have been terminated under the Contractor's Agreement with the Owner.

4. In case of a termination pursuant to this paragraph B, the Owner will issue a Construction Change Directive or authorize a Change Order, making any required adjustment to the Date of Substantial Completion and/or the sum of contract monies remaining to be paid to the Contractor. The Owner shall be credited for: (1) payments previously made to the Contractor for the terminated portion of the Work; (2) claims which the Owner has against the Contractor under the Contract; and (3) the value of the materials, supplies, equipment or other items that are to be disposed of by the Contractor that are part of the Contract Sum; multiplied by fifteen percent (15%) representing the Contractor's overhead and profit.

5. For the remaining portions of the Contractor's work which have not been terminated pursuant to this paragraph B, the terms and conditions of the Contractor's Agreement with the Owner shall remain in full force and effect.

6. Upon termination of the Contractor's work or a portion of the Contractor's work pursuant to this paragraph B, the Contractor shall recover as its sole remedy, payment for work which it has properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely fabricated off the Project site, delivered and stored in accordance with the Owner's instructions. The Contractor hereby waives and forfeits all other claims for payment and damages, including, without limitation, overhead and profit related to work terminated by the Owner pursuant to this paragraph B.

C.

1. In addition to the Owner's right to suspend, delay, or interrupt the Contractor from proceeding with any portion of its work pursuant to the terms and conditions of its Agreement with the Owner, the Owner may at any time, at will and without cause suspend, delay, or interrupt any part of the Contractor's work or all work for any reason whatsoever for such period of time as the Owner may determine by giving three (3) days' prior written notice to the Contractor, specifying that portion of the Contractor's work which is to be suspended, delayed, or interrupted, and the effective date of such suspension, delay, or interruption, as the case may be.

2. The Contractor shall continue to prosecute that portion of its work which has not been suspended, delayed, or interrupted, and shall properly protect and secure the portion of its work so suspended, delayed, or interrupted.

3. The Owner shall incur no liability to the Contractor by reason of such suspension, delay, or interruption except that the Contractor may request an extension of its time to complete its work in accordance with Article 13 hereof.

D. The Contractor agrees and acknowledges that payments for the work have been obtained through obligations or bonds which have been sold after public referendum. In the event the work is suspended or canceled as a result of the order of any court, agency, department entity or individual having jurisdiction, or in the event the work is suspended or canceled due to the fact that a court, agency, department, entity or individual having jurisdiction has issued an order, the result of which is that the aforesaid obligations or bonds are no longer available for payment for the work, the Contractor expressly agrees that it shall be solely entitled to payment for work accomplished until a notice of suspension or cancellation is served upon it. The Contractor expressly waives any and all rights to institute an action, claim, cause of action or similar for any damages it may suffer as a result of the suspension or cancellation of the Work and/or its contract pursuant to this section.

ARTICLE 18 CLAIMS AND DISPUTES

A. Definition. A "Claim" is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other

disputes and matters in question between the Owner and the Contractor arising out of or relating to the Contract.

B. Time Limits on Claims. Claims by the Contractor must be made within thirty (30) days after occurrence of the event giving rise to such Claim, or within thirty (30) days after the claimant first recognizes the condition giving rise to the Claim, whichever is earlier. An additional Claim made after the initial Claim has been decided by the Owner will not be considered unless submitted in a timely manner. Failure of the Contractor to give timely notice of claim shall constitute waiver of the claim. Claims must be made by written notice to the Architect, and the Owner. The responsibility to substantiate Claims shall rest with the Contractor.

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

D. Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are: (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents; or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then written notice by the Contractor shall be given to the Owner and the Architect promptly before conditions are disturbed and in no event later than five (5) days after first observance of the conditions; and (3) in the case of a condition at the site which involves a hazardous or toxic substance, as those terms are defined by OSHA or AHERA, written notice to the Owner and the Architect shall be given immediately upon discovery of such hazardous or toxic substance. The Architect, and/or the Owner will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall so notify the Contractor in writing, stating the reasons.

E. Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum as a result of a Change in the Work pursuant to Article 8 of these General Conditions, written notice as provided in this Article 18 shall be given before proceeding to execute the Work.

F. Claims for Additional Time. If the Contractor wishes to make Claim for an increase in the Contract Time, the Contractor shall comply with the requirements set forth in Article 13(H).

G. Nothing contained in the Contract Documents shall relieve the Contractor from compliance with any statutory requirement, including, but not limited to those contained in Education Law Section 3813.

ARTICLE 19
MISCELLANEOUS PROVISIONS

A. The Agreement between the Owner and the Contractor shall be governed by the law of the place where the Project is located; venue to be in the County in which the Project is located.

B. Historical lack of enforcement of any federal, state, and local laws, ordinances, regulations, rules, codes, orders, and policies shall not constitute a waiver of Contractor's responsibility for compliance with such law in a manner consistent with its Agreement with the Owner unless and until the Contractor has received prior written consent for the waiver of such compliance from the Owner and the Agency responsible for the enforcement of such law.

C. All notices to be given hereunder shall be in writing and may be given, served, or made: (1) by depositing the same for first class mail delivery in the United States mail addressed to the authorized representative of the party to be notified; (2) by depositing the same in the United States mail addressed to the authorized representative of the party to be notified, postpaid and registered or certified with return receipt requested; (3) by depositing the same for overnight delivery (prepaid by or billed to the party giving notice) with the United States Postal Service or other nationally recognized overnight delivery service addressed to the authorized representative of the party to be notified; or (4) by delivering the same in person to the said authorized representative of such party. Notice deposited in the mail by certified mail or overnight delivery in accordance with the provisions hereof shall be effective from and after the fourth (4th) day next following the date postmarked on the envelope containing such notice, or when actually received, whichever is earlier. All notices to be given to the parties hereto shall be sent to or made at the addresses set forth hereinbelow. By giving the other parties at least seven (7) days' written notice thereof, the parties hereto shall have the right to change their respective addresses and specify as their respective addresses for the purposes hereof any other address in the United States of America.

D. Except as expressly provided in the Agreement between the Owner and the Contractor, duties and obligations imposed by such Agreement and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law, or in equity or by other Agreement, and such rights and remedies shall survive acceptance of the Contractor's work and/or any other termination of the Contractor's Agreement with the Owner.

E. No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

F. The headings denoting the separately numbered Articles of these General Conditions are specifically set forth for reference purposes only and are not in any way to be deemed explanatory of or limiting of the contents of any paragraph or subparagraph. Furthermore, said headings are

not to be deemed part of this Agreement for purposes of interpretation, litigation or as defining or limiting the rights or obligations of the parties.

G. In case any provision of this Agreement should be held to be contrary to, or invalid, under the law of any country, state or other jurisdiction, such illegality or invalidity, shall not affect in any way, any other provisions hereof, all of which shall continue, nevertheless, in full force and effect in any country, state, or jurisdiction in which such provision is legal and valid.

H. The rights stated in these General Conditions and the documents which form the Agreement between the Owner and the Contractor are cumulative and not in limitation of any rights of the Owner at law or in equity.

I. The Owner shall not be responsible for damages or for loss of anticipated profits on work not performed on account of any termination of the Contractor by the Owner or by virtue of the Owner's exercise of its right to take over the Contractor's work pursuant to its Agreement with the Contractor.

J. The Owner shall not be liable to the Contractor for punitive damages on account of its termination of the Contractor or any other alleged breach of the Agreement between it and the Contractor and the Contractor hereby expressly waives its right to claim such damages against the Owner.

K. The Contractor hereby expressly waives any rights it may have in law or in equity to lost bonding capacity as a result of any of the actions of the Owner or the Architect taken in connection with the Contractor's work on the Project.

L. Upon determination by legal means (*e.g.*, court action, etc.) that termination of Contractor pursuant to Article 17.A.1 was wrongful, such termination will be deemed converted to a termination for convenience pursuant to Article 17.B.1 and Contractor's remedy for such termination shall be limited to the recovery of the payments permitted for termination for convenience as set forth in Article 17.B.1.

M. As between the Owner and the Contractor:

1. Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;

2. Between Substantial Completion and Final Certificate for Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and

3. After Final Certificate for Payment. As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to warranties provided in accordance with its Agreement with the Owner, the date of any correction of work performed by the Contractor or failure to correct its work, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or the Owner, whichever occurs last.

N.

1. The Owner may occupy or use any completed or partially completed portion of the Contractor's work at any stage when such occupancy is authorized by public authorities having jurisdiction over the Project.

2. Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of the Contractor's work, nor does it waive the Owner's right to liquidated damages. Further such occupancy alone shall not determine when Substantial Completion and performance has been reached.

3. Immediately prior to such partial occupancy or use, the Owner, the Contractor, and the Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Contractor's work, and in order to prepare a complete punch list of omissions of materials, faulty workmanship, or any items to be repaired, torn out or replaced.

O. The Contractor agrees not to assign, transfer, convey, or sublet or otherwise dispose of this Contract or his right, title, and interest therein or his power to execute such Contract, to any other person, firm, or corporation without the previous consent in writing of the Owner.

P. The Owner is a tax exempt organization and will take title to materials used in the Project in order to permit tax exemption.

Q. The Owner will furnish a certificate with the Owner's Tax Exemption Number to the Contractor for use in purchasing tangible personal property required for the Project.

R. This exemption shall not apply to machinery, equipment, tools, and other items purchased, leased, rented, or otherwise acquired for the Contractor's use even though the machinery, equipment, tools, or other items are used either in part or entirely on the Work. This exemption shall apply only to materials fully incorporated into the Work of the Contract as accepted and approved by the Architect.

S. The Contractor shall, upon request by the Owner, furnish a bill of sale or other instrument indicating the quantities and types of materials purchased directly by the Contractor or SubContractor for incorporation into the Work. Upon delivery of the materials to the site, the

Contractor shall mark or otherwise identify the materials to be incorporated into the Work. This exemption shall apply only to materials so identified and accepted.

END OF GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

DIVISION INDEX

PLAINEDGE UNION FREE SCHOOL DISTRICT

JOHN H. WEST ELEMENTARY SCHOOL / CHARLES E. SCHWARTING ELEMENTARY SCHOOL/ EASTPLAIN ELEMENTARY SCHOOL / PLAINEDGE MIDDLE SCHOOL LIBRARY MEDIA CENTER RENOVATIONS

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011000	SUMMARY – SPECIAL CONDITIONS	5
011100	SUMMARY OF SINGLE CONTRACT	3
012000	PROJECT MEETINGS	1
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PLAINEDGE UNION FREE SCHOOL DISTRICT

**JOHN H. WEST ELEMENTARY SCHOOL / CHARLES E. SCHWARTING ELEMENTARY SCHOOL/
EASTPLAIN ELEMENTARY SCHOOL / PLAINEDGE MIDDLE SCHOOL
LIBRARY MEDIA CENTER RENOVATIONS**

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017900	DEMONSTRATION AND TRAINING	4

A. General Safety and Security Standards for Construction Projects:

1. ALL construction materials shall be stored in a safe and secure manner.
2. Fences around construction supplies or debris shall be maintained.
3. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.
4. During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.
5. Workers shall be required to wear photo-identification badges at all times for identification and security purposes while working at occupied sites. Contractor MUST provide them for all workers under his direction and control, including sub-contractors.

B. Separation of Construction Areas from Occupied Spaces:

1. Construction areas, which are under the control of a Contractor and therefore not occupied by the District staff or students, shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. Heavy-duty plastic sheeting may be used only for a vapor, fine dust or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas.
2. A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs, or elevators designated for students or school staff.
3. All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session.
4. Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through hall of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.
5. Exterior work such as roofing, flashing, siding, or soffit work may be performed on occupied buildings provided proper variances are in place as required, and complete isolation of ventilation systems and at windows is provided. Care must be taken to schedule work so that classes are not disrupted by noise or visual distraction.
6. Occupied CLASSROOM spaces shall be protected against visual distraction due to construction activities.
7. All Contractors shall maintain proper operation of fire extinguishers, fire alarm, and smoke/fire detection systems and all items shall be maintained throughout the project.

C. Exiting Plan:

1. See drawings for a plan detailing how exiting code requirements shall be provided and maintained. "Architect to review and approve any changes made during the construction process see Spec Section 011000 Summary –

Special Conditions, Section 1.14 Construction Separation Enclosures for additional information."

D. Fire and Hazard Prevention:

1. All holes in floors and walls shall be sealed with a fire-resistant material.
2. Proper operation of fire extinguishers, fire alarm, and smoke/fire detection systems shall be maintained throughout the project.
3. During construction daily inspections of district occupied areas shall be conducted by school district personnel to assure that construction materials, equipment or debris does not block fire exits or emergency egress windows.
4. Areas of buildings under construction that are to remain occupied shall maintain a certificate of occupancy.

E. Construction Noise: Construction and maintenance operation shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected spaces are not occupied or acoustical abatement measures shall be taken.

F. Construction Ventilation of All Occupied Spaces:

1. See drawing for a plan detailing how adequate ventilation shall be maintained during construction. The plan shall indicate ductwork which must be rerouted, disconnected, or capped in order to prevent contaminants from the construction area from entering the occupied areas of the building. The plan shall also indicate how required ventilation to occupied spaces affected by construction will be maintained during the project. In the absence of any drawing, General Contractor shall provide temporary ventilation equivalent to 15 CFM per occupant and sufficient outdoor air to comply with applicable codes.
2. The Contractor shall be responsible for the control of chemical fumes, gases, and other contaminants produced by welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes.
3. The Contractor shall be responsible to ensure that activities and materials "which result in off-gassing" of volatile organic compounds such as glues, paints, furniture, carpeting, wall covering, drapery, etc. are scheduled, cured or ventilated in accordance with manufacturers recommendations before a space can be occupied.

G. Hazardous Materials:

1. Asbestos:
 - a. Asbestos Industrial Code Rule 56: large and small asbestos abatement projects as defined by 12NYCRR56 shall not be performed while the building is occupied except as determined by AICR56 with proper isolation.
 - b. Labor Rule 56 and AHERA both must be followed for asbestos projects in schools. Whenever air clearance is required by Labor Rule 56 or AHERA, TEM must be used for the final air clearance test.
 - c. Labor Rule 56 addresses final air clearance for all asbestos work including minor glove bag projects when there is a breach in containment. AHERA requires that TEM be used for final air clearance for work in schools, but does not speak to minor project air clearance.

- d. NOTE: It is NYS State Education Department's interpretation that the term "building" as referenced in this section, means a wing or major section of a building that can be completely isolated from the rest of the building with a sealed non-combustible construction. The isolated portion of the building must contain exits, which do not pass through the occupied portion, and ventilation systems must be physically separated and sealed at the isolation barrier.
- 2. Exterior Work:
 - a. Exterior work such as roofing, flashing, siding, or soffit work may be performed on occupied buildings provided proper variances are in place as required and complete isolation of ventilation systems and at windows is provided. Care must be taken to schedule work so that classes are not disrupted by noise or visual distraction.
- 3. Lead:
 - a. Surfaces that will be disturbed by reconstruction must have a determination made as to the presence of lead. Projects which disturb surfaces that contain lead shall have in the specifications a plan prepared by a certified Lead Risk Assessor or Supervisor which details provisions for occupant protection, worksite preparation, work methods, cleaning and clearance testing which are in general accordance with the HUD Guidelines.

H. SCHOOL DISTRICT REGULATIONS:

- 1. Control Of Persons, Traffic On Site:
 - a. It shall be noted and stressed that the contractor's installations may be made during a period when school is in session except for work that shall not be undertaken while students and staff are present at the site. Schedule and conduct operations so as to cause the least amount of inconvenience to normal school operations. Provide the necessary safeguards to protect those children and others at the site.
 - b. Contractor shall control action of all persons on the site working on this project and shall enforce all regulations. Do not interfere with operations and traffic pattern of school buses and other normal traffic on site.
 - c. Workers will use only designated parking areas and work and staging areas.
 - d. Workers will not enter building except to perform work in the building.
 - e. All personnel on the site are subject to the same general regulations as school staff and the contractor shall enforce such regulations.
 - f. Contractor's personnel shall limit their access to the building to areas in which work is being done.
 - g. Contractors SHALL NOT use tools, or other equipment, ladders, or appliances, etc., owned by the School District or occupants.
 - h. No smoking and/or drinking alcoholic beverages is allowed on public school property, including construction areas.
- 2. Field Test Procedures:
 - a. Contractors, their agents, sub-contractors etc. shall do no "testing" of any equipment or systems while school is in session.
 - b. Contractor shall notify Owner and Architect in writing prior to any test.

END OF SECTION

SECTION 011000 – SUMMARY – SPECIAL CONDITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section applies to all contractors.
- B. This Section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Type of the Contract.
 - 3. Use of premises.
 - 4. Owner's occupancy requirements.
 - 5. Work restrictions.
 - 6. Time of Completion and Sequence of Operation.
 - 7. Delays and Extension of Time.
 - 8. Protection of Work.
 - 9. Construction Separation Enclosures
 - 10. Specification formats and conventions.
 - 11. Contract Documents
 - 12. OSHA Ten-Hour Bill Requirements.
- C. Related Sections include the following:
 - 1. Division 1 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: **Library Media Center Renovations, John H. West Elementary School, Charles E. Schwarting Elementary School, Eastplain Elementary School, Plainedge Middle School, Plainedge Union Free School District.**

- 1. Project Locations:

John H. West Elementary School, Plainedge Union Free School District, 499 Boundary Ave, Bethpage, NY 11714

Charles E. Schwarting Elementary School, Plainedge Union Free School District, 1 Flower Rd, Massapequa, NY 11758

Eastplain Elementary School, Plainedge Union Free School District, 301 N Delaware Ave, North Massapequa, NY 11758

Plainedge Middle School, Plainedge Union Free School District, 200 Stewart Ave, Bethpage, NY 11714

SECTION 011000 – SUMMARY – SPECIAL CONDITIONS

2. Owner: **Board of Education, Plainedge Union Free School District, 241 Wyngate Drive, North Massapequa, N.Y. 11758.**
3. Owner's Representative: **Brett Prochazka**, Director of Facilities, Tel: (516) 992-7422.
- B. Architect: Mark Design Studios Architecture, P.C., 270 North Broadway, Hicksville, NY 11801, Telephone (516) 827-0240.
- C. The Work includes, but is not limited to the following:
 1. Selective demolition.
 2. Interior alterations to upgrade (4) existing Library Media Centers at John West Elementary School, Charles E. Schwarting Elementary School, Eastplain Elementary School and Plainedge Middle School, complete renovation, including all work.
 3. Renovation and improvement of existing Turf Field at John H. West Elementary School, including all work.
 4. All related work as shown on the plans and specifications.

1.4 TYPE OF CONTRACT

- A. Project will be constructed under one contract with **one (1)** prime contractor.
- B. The within contract seeks bids from multiple prime contractors. Each bidder shall submit with its bid a separate sealed list that names each subcontractor that the bidder will use to perform work on the contract, and the agreed-upon amount to be paid for each, for: (a) plumbing and gas fitting, (b) steam fitting, hot water heating, ventilating and air conditioning apparatus and (c) electric wiring and standard illuminating fixtures. After the low bid is announced, the sealed list of subcontractors submitted with such low bid shall be opened and the names of such subcontractors shall be announced, and thereafter any change of subcontractor or agreed-upon amount to be paid to each shall require the approval of the school district, upon a showing presented to the school district of legitimate construction need for such change, which shall be open to public inspection. Legitimate construction need shall include, but not be limited to, a change in project specifications, a change in material costs, a change to subcontractor status as determined pursuant to paragraph (e) of subdivision two of section two hundred twenty-two of the labor law, or the subcontractor has become otherwise unwilling, unable or unavailable to perform the subcontract. The sealed list of subcontractors submitted by all other bidders shall be returned to them unopened after the contract award.
- C. Each trade shall be responsible for all provisions of the contract documents as relates to their respective scopes of work.

1.5 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations.
- B. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 1. Limits: Confine constructions operations to parking lot near construction operations.

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SED# 28-05-18-03-0-002-023

SED# 28-05-18-03-0-004-024

SED# 28-05-18-03-0-009-013

SECTION 011000 – SUMMARY – SPECIAL CONDITIONS

2. Owner Occupancy: Allow for Owner occupancy of Project site.
3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Use of Existing Building: Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period. Maintain paths of egress from within building to exterior and from exits to safe areas away from building.

1.6 OWNER'S OCCUPANCY REQUIREMENTS

- A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

1.7 WORK RESTRICTIONS

- A. On-Site Work Hours: Work shall be generally performed inside the existing building during normal business working hours (non-school days) of 7 a.m. to 3 p.m., Monday through Friday, throughout the summer recess months except as otherwise indicated. Should the work continue into the school year or for any work performed during school hours, working hours will be shifted to 3 p.m. to 11 p.m., Monday to Friday unless otherwise directed by the owner.
 1. Weekend Hours: To be approved by and coordinated with owner.

1.8 TIME OF COMPLETION AND SEQUENCE OF OPERATIONS

- A. All work shall be completed as quickly as possible and installation shall be complete and operable by Substantial Completion on **August 15, 2025**.
- B. Work shall not be started until Notice of Award is given by the School District.
- C. In the event that the work is delayed and not completed by the completion dates, the Owner shall have the option of selecting any one or a combination of the following procedures, in addition to other remedies:
 1. Permit the contractor to continue to work but only at times specified by the Owner who may include irregular days, hours, and weekends.
 2. Require that the contractor stop construction, remove materials not incorporated in the building, leave the building and equipment in a safe, workable condition and complete the work during a time period as directed by the Owner.
 3. Take a credit for uncompleted work.

SECTION 011000 – SUMMARY – SPECIAL CONDITIONS

- D. Contractors are reminded that it is imperative that all work be scheduled, sequenced, tested, and operational and approved by the completion date. Failure to do so will result in the assessment of liquidated damages in accordance with the General Conditions.

1.9 DELAYS AND EXTENSION OF TIME

- A. If the Contractor is delayed in the completion of his work by an act or neglect of the Owner or by changes ordered in the work or by any cause which the Architect shall deem to justify the delay as being beyond the Contractor's control, then the time of completion shall be extended as set forth at Article 8 of the General Conditions.
- B. No such extension shall be made for any delay occurring more than twenty (20) days before claim therefore is made in writing by the Contractor.
- C. No charges or claim for damages shall be made by the Contractor for any delays or hindrances, from any cause whatsoever, occurring during the progress of any portion of the work. Such delays or hindrances shall be compensated for by an extension of time as above provided.
- D. The permitting of the Contractor to proceed to complete any work or any part of it after the date of completion or after the date to which the time for completion may have been extended shall in no way operate as a waiver on the part of the Owner of any rights hereunder.

1.10 PROTECTION OF THE WORK

- A. Work at the site shall proceed continuously. Shut down of job due to cold weather may be required if weather conditions are not conducive to proper installation of roofing due to temperature or moisture and not in accordance with manufacturer specifications.
- B. Each contractor shall effectively protect, at his expense, all materials and equipment, including the employees, during the period of construction, and he shall be held responsible for all damage done to this work, until the same is fully and finally accepted by the Owner.
- C. Throughout this work, it shall be each contractor's responsibility to maintain water and weather protection for the areas of the building in which work is in progress.
- D. Ladders shall be removed from site or chained in place in storage areas so they are not accessible to unauthorized persons.

1.11 CONSTRUCTION SEPARATION ENCLOSURES:

- A. Provide dust tight enclosures to separate new work from existing. These shall be maintained during the course of construction and removed at completion of construction and wall, jambs and ceiling patched as required. Alarm systems and components to remain active during construction period. Coordinate with owner.

SECTION 011000 – SUMMARY – SPECIAL CONDITIONS

- B. Enclosure shall not be removed until new work has been cleaned. Contractor shall bear the cost of cleaning in existing building if due to removal of enclosures prior to proper cleaning of new areas.
- C. If necessary, enclosures shall be relocated during progress of work.
- D. No dead end corridors shall be formed by temporary enclosures. A dead end corridor is defined as larger than 1 1/2 times the corridor width.

1.12 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-division format and CSI/CSC's "Master Format" numbering system.
 - 1. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the Specifications.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 - 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.13 CONTRACT DOCUMENTS

- A. The Architect will furnish digital sets of specifications and drawings for each contractor's use, and each set shall contain all contract divisions of work. Contractor to contact Bid Document printer as listed in Notice to Bidders upon award of contract to request additional sets at their sole expense, if required.

1.14 OSHA TEN HOUR BILL REQUIREMENTS:

The advertised specifications for every contract for public work of \$250,000.00 or more must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors receive such training "prior to the performing any work on the project."

SECTION 011000 – SUMMARY – SPECIAL CONDITIONS

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card;
- Training roster, attendance record or other documentation from the certified trainer pending the issuance of the card.
- Other valid proof.

**A certification by the employer attesting that all employees have completed such course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-485-5696.

END OF SECTION

SECTION 011100 - SUMMARY OF SINGLE PRIME CONTRACT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes a summary of the Single Prime Contract, including responsibilities for temporary facilities and controls.
- B. Specific requirements of each are also indicated in individual Specification Sections and on Drawings.
- C. Related Sections include the following:
 - 1. Division 1 Section "Summary – Special Conditions" for the Work covered by the Contract Documents, restrictions on use of the premises, Owner-occupancy requirements, and work restrictions.
 - 2. Division 1 Section "Temporary Facilities and Controls" for specific requirements for temporary facilities and controls.

1.3 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1. COORDINATION

- a. Project Coordinator shall be responsible for coordination between the following contracts:
 - 1) General Construction Contract G-1

2. PROJECT COORDINATOR

- A. Project Coordinator: Each trade shall provide a Full-time Project Coordinator who shall be experienced in administration and supervision of their respective trade scope of work.
 - 1) Coordination activities of Project Coordinator include, but are not limited to, the following:
 - a) Provide overall coordination of the Work.
 - b) Coordinate shared access to work spaces.
 - c) Coordinate product selections for compatibility.

SECTION 011100 - SUMMARY OF SINGLE PRIME CONTRACT

- d) Provide overall coordination of temporary facilities and controls.
- e) Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
- f) Coordinate construction and operations of the Work with work performed by each contract.
- g) Prepare Coordination Drawings to coordinate work by more than one contract.
- h) Coordinate sequencing and scheduling of the Work. Include the following:
 - 1) Prepare a combined Contractor's Construction Schedule for entire Project. Base schedule on Preliminary Construction Schedule. Secure time commitments for performing critical construction activities from separate contractors. Show activities of each contract on a separate sheet. Prepare a simplified summary sheet indicating combined construction activities of contracts.
- i) Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
- j) Provide progress cleaning of common areas and coordinate progress cleaning of areas or pieces of equipment where more than one contractor has worked.
- k) Coordinate cutting and patching.
- l) Coordinate protection of the Work.
- m) Coordinate firestopping.
- n) Coordinate preparation of Project Record Documents if information from more than one contractor is to be integrated with information from other contractors to form one combined record.
- o) Coordinate preparation of operation and maintenance manuals if information from more than one contractor is to be integrated with information from other contractors to form one combined record.

3. CONTRACTS, GENERAL

- a. Extent of Contract: Unless the Contract Documents contain a more specific description of the Work, names and terminology on Drawings and in Specification Sections determine which contract includes a specific element of Project.

The Contractor is responsible for familiarizing himself with the entire scope of the work for all contracts and will be responsible for all related work to that trade, unless otherwise noted. Any questions or discrepancies shall be brought to the immediate attention of the Architect for resolution. The decision of the Architect with regard to which Contractor shall bear responsibility for a particular item shall be binding to all parties.

- 1) Unless otherwise indicated, the Work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
- 2) Local custom and trade-union jurisdictional settlements do not control the scope of the Work of each contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, affected contractors shall negotiate a reasonable settlement to avoid or minimize interruption and delays.
- 3) Trenches for the Work of each contract shall be provided by each contract for its own Work.
- 4) Cutting and patching for the Work of each contract shall be provided by each contract for its own Work. Materials to match existing unless otherwise noted.

SECTION 011100 - SUMMARY OF SINGLE PRIME CONTRACT

- 5) Firestopping for the Work of each contract shall be provided by each contract for its own Work. Firestopping details located on A-series drawings.
 - 6) Within five working days after preliminary horizontal bar-chart-type construction schedule submittal has been received from Project Coordinator, submit a matching preliminary horizontal bar-chart schedule showing construction operations sequenced and coordinated with overall construction.
- b. Substitutions: Each contractor shall cooperate with other contractors involved to coordinate approved substitutions with remainder of the Work.
 - c. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section, each contractor is responsible for the following:
 - 1) Installation, operation, maintenance, and removal of each temporary facility usually considered as its own normal construction activity, and costs and use charges associated with each facility.
 - 2) Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
 - 3) Its own storage and fabrication sheds.
 - 4) Temporary enclosures for its own construction activities.
 - 5) Special or unusual hoisting requirements for its own construction activities, including hoisting loads in excess of 2 tons (2000 kg), hoisting material or equipment into spaces below grade, and hoisting requirements outside building enclosure.
 - 6) Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
 - 7) Progress cleaning of its own areas on a daily basis.
 - 8) Secure lockup of its own tools, materials, and equipment.
 - 9) Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.
 - d. Temporary Heating, Cooling, and Ventilation: The Contractor is responsible for temporary heating, cooling, and ventilation before and after permanent enclosure of building is complete.
 - e. Use Charges: The Contractor shall be responsible for utility & electrical costs in the new facility until substantial completion. The Contract Sum of his contract shall include cost of providing and using temporary services and facilities, including use charges.
4. GENERAL CONSTRUCTION CONTRACT G-1
- a. Work in the General Construction Contract includes, but is not limited to, the following:
 - 1) All work as detailed in drawings and specifications, inclusive of all trades, unless otherwise specifically noted.

END OF SECTION

SECTION 012000 - PROJECT MEETINGS

1.01 PURPOSE

Project meetings shall be held every 2 weeks to accomplish the following:

- A. Coordinate the Work.
- B. Establish a sound working procedure and relationship between the Contractor, all other contractors, and the Owner's Representative.
- C. Surface problem areas, assign responsibilities to appropriate parties: i.e., Designer, Owner, or Contractor.
- D. Review the progress of the Work, review quality of work in place, review approval required by the Work and review delivery of materials.
- E. Expedite the Work to completion within the scheduled time limit.

1.02 INITIAL JOB MEETING (PRE-CONSTRUCTION MEETING)

- A. The Owner's Representative will call a Pre-Construction meeting which the Contractor shall attend. This meeting will be called prior to the start of construction.

1.03 JOB PROGRESS MEETINGS

- A. Job progress meetings will be scheduled by the Owner's Representative during the course of construction; the Representative will preside. The Contractor or the Contractor's duly authorized representative and such Subcontractors, materialmen and vendors as required by the Architect or the Owner's Representative shall be present at all job progress meetings. The Contractors and Subcontractors, materialmen and vendors shall answer questions on progress, workmanship, approvals required, delivery of material and other subjects concerning the Work.
- B. The Architect will provide that minutes of these meetings will be recorded and typed, and copies will be distributed to all parties involved.

END OF SECTION

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section applies to all contractors.
- B. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- C. Related Sections include the following:
 - 1. Division 1 Section "Allowances" for procedural requirements for handling and processing allowances.
 - 2. Division 1 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK

- A. Subject to the requirements set forth at Article 8 of the General Conditions - Changes in the Work, Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within 15 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 6. Comply with requirements in Division 1 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.
 7. All change orders for time and/or modification to the contract sum are subject to the written approval and authorization of the Owner as set forth at Article 8 of the General Conditions.
- C. Proposal Request Form: Use AIA Document G709 for Proposal Requests or forms approved by the Architect.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A This section applies to all contractors.
- B This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1 Administrative and supervisory personnel.
 - 2 Project meetings.
 - 3 Requests for Interpretation (RFIs).
- C Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- D Related Sections include the following:
 - 1 Division 1 Section "Summary of Single Contracts" for a description of the division of Work among separate contracts and responsibility for coordination activities not in this Section.
 - 2 Division 1 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
 - 3 Division 1 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 4 Division 1 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

- A Coordination: The Contractor shall coordinate its construction operations to ensure efficient and orderly installation of each part of the Work.
 - 1 Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2 Coordinate installation of different components to ensure maximum accessibility for required maintenance, service, and repair.
 - 3 Make adequate provisions to accommodate items scheduled for later installation.
 - 4 Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required

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maintenance, service, and repair of all components, including mechanical and electrical.

- B Administrative Procedures: Coordinate scheduling and timing of construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1 Preparation of Contractor's Construction Schedule.
 - 2 Preparation of the Schedule of Values.
 - 3 Installation and removal of temporary facilities and controls.
 - 4 Delivery and processing of submittals.
 - 5 Progress meetings.
 - 6 Preinstallation conferences.
 - 7 Startup and adjustment of systems.
 - 8 Project closeout activities.
- C Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
 - 1 Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.5 COORDINATION DRAWINGS

- A Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 - 1 Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b Coordinate the addition of trade-specific information to the coordination drawings by contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
 - c Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - d Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
 - e Show location and size of access doors required for access to concealed dampers, valves, and other controls.
 - f Indicate required installation sequences.
 - g Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor

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dimension changes and difficult installations will not be considered changes to the Contract.

1.6 SUBMITTALS

A Key Personnel Names: Within 10 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

- 1 Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.7 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

- 1 Include special personnel required for coordination of operations with other contractors.

1.8 PROJECT MEETINGS

A General: Architect shall schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

- 1 Minutes: Architect shall record significant discussions and agreements achieved and distribute the meeting minutes to everyone concerned.

B Preconstruction Conference: Architect shall schedule a preconstruction conference before starting construction, at a time convenient to all parties no later than 15 days after execution of the Agreement.

- 1 Agenda: Discuss items of significance that could affect progress, including the following:
 - a Tentative construction schedule.
 - b Phasing.
 - c Critical work sequencing and long-lead items.
 - d Designation of key personnel and their duties.
 - e Procedures for processing field decisions and Change Orders.
 - f Procedures for RFIs.
 - g Procedures for testing and inspecting.
 - h Procedures for processing Applications for Payment.
 - i Distribution of the Contract Documents.
 - j Submittal procedures.
 - k Preparation of Record Documents.
 - l Use of the premises and existing building.
 - m Work restrictions.
 - n Owner's occupancy requirements.
 - o Responsibility for temporary facilities and controls.
 - p Construction waste

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- q Parking availability.
 - r Office, work, and storage areas.
 - s Equipment deliveries and priorities.
 - t First aid.
 - u Security.
 - v Progress cleaning.
 - w Working hours.
 - 2 Minutes: Architect will record and distribute meeting minutes.
- C Progress Meetings: Architect will conduct progress meetings at biweekly intervals.
- 1 Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2 Failure of a Prime Contractor to be represented at a job meeting by a competent representative with authority to make decisions on behalf of this contractor shall result in damages in the amount of \$350.00 for each occurrence and will be assessed by means of a credit or deduct change order against their contract.
 - 3 Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress of the project.
 - a Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.

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- 4 Minutes: Architect will record and distribute to all parties the meeting minutes.
 - a Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.9 REQUESTS FOR INTERPRETATION (RFIs)

- A Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the attached form or Architects approved form (facsimile of sample form at end of Section).
 - 1 RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 - 2 Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
 - 1 Project name.
 - 2 Date.
 - 3 Name of Contractor.
 - 4 Name of Architect.
 - 5 RFI number, numbered sequentially.
 - 6 Specification Section number and title and related paragraphs, as appropriate.
 - 7 Drawing number and detail references, as appropriate.
 - 8 Field dimensions and conditions, as appropriate.
 - 9 Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 10 Contractor's signature.
 - 11 Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C Hard-Copy RFIs or Software-Generated RFIs:
 - 1 Identify each page of attachments with the RFI number and sequential page number.
- D Architect's Action: Architect will review each RFI, determine action required, and return it.
 - 1 The following RFIs will be returned without action:
 - a Requests for approval of submittals.
 - b Requests for approval of substitutions.
 - c Requests for coordination information already indicated in the Contract Documents.
 - d Requests for adjustments in the Contract Time or the Contract Sum.
 - e Requests for interpretation of Architect's actions on submittals.

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

- f Incomplete RFIs or RFIs with numerous errors.
 - 2 Architect's action may include a request for additional information.
 - 3 Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 1 Section "Contract Modification Procedures."
 - a If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- E On receipt of Architect's action, immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

REQUEST FOR INTERPRETATION

Project:_____	R.F.I. Number: _____
_____	From: _____
To: _____	Date:_____
_____	A/E Project Number: _____
Re: _____	Contract For: _____

Specification Section: _____	Paragraph: _____	Drawing Reference: _____	Detail: _____

Request:

Signed by: _____	Date: _____

Response:

☐ Attachments

Response From: _____	To: _____	Date Received: _____	Date Returned: _____

Signed by: _____	Date: _____

Copies: ☐	☐ Owner	☐ <u>Consultants</u>	_____ ☐ _____	☐ _____ ☐
	☐ File			

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1. GENERAL

1.1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2. SUMMARY

- A. This section applies to all contractors.
- B. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Preliminary Construction Schedule.
 - 2. Contractor's Construction Schedule.
 - 3. Submittals Schedule.
 - 4. Field condition reports.
 - 5. Special reports.
- C. Related Sections include the following:
 - 1. Division 1 Section "Summary of Single Contract" for preparing a Contractor's Construction Schedule.
 - 2. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
 - 3. Division 1 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3. DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
- B. Cost Loading: The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by Architect.
- C. Event: The starting or ending point of an activity.
- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- E. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

- F. Major Area: A story of construction, a separate building, or a similar significant construction element.
- G. Milestone: A key or critical point in time for reference or measurement.
- H. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4. SUBMITTALS

- A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's final release or approval.
- B. Preliminary Construction Schedule: Submit two opaque copies.
 - 1. Approval of cost-loaded preliminary construction schedule will not constitute approval of Schedule of Values for cost-loaded activities.
- C. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
- D. Field Condition Reports: Submit two copies at time of discovery of differing conditions.
- E. Special Reports: Submit two copies at time of unusual event.

1.5. QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:
 - 1. Review software limitations and content and format for reports.
 - 2. Verify availability of qualified personnel needed to develop and update schedule.
 - 3. Discuss constraints, work stages, area separations, interim milestones and partial Owner occupancy.
 - 4. Review delivery dates for Owner-furnished products.
 - 5. Review time required for review of submittals and resubmittals.
 - 6. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - 7. Review time required for completion and startup procedures.
 - 8. Review and finalize list of construction activities to be included in schedule.
 - 9. Review submittal requirements and procedures.
 - 10. Review procedures for updating schedule.

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

1.6. COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from parties involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2. PRODUCTS

2.1. SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 - 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
 - 2. Initial Submittal: Submit concurrently with preliminary bar-chart schedule or network diagram. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2. CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."
- B. Time Frame: Extend schedule from date established for the Notice of Award (Letter of Intent) to date of Final Completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 - 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
 4. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Work under More Than One Contract: Include a separate activity for each contract.
 2. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Use of premises restrictions.
 - e. Provisions for future construction.
 - f. Environmental control.
 3. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Mockups.
 - e. Fabrication.
 - f. Sample testing.
 - g. Deliveries.
 - h. Installation.
 - i. Tests and inspections.
 - j. Adjusting.
 - k. Curing.
 4. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural completion.
 - b. Permanent space enclosure.
 - c. Completion of electrical installation.
 - d. Substantial Completion.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.
- G. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

2.3. PRELIMINARY CONSTRUCTION SCHEDULE

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

- A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within seven days of date established for the Notice to Proceed (Letter of Intent).
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.4. CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed (Letter of Intent). Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 - 1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.5. REPORTS

- A. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.6. SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner and Architect in advance when these events are known or predictable.

PART 3. EXECUTION

3.1. CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1. GENERAL

1.1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2. SUMMARY

- A. This section applies to all contractors.
- B. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- C. Related Sections include the following:
 - 1. Division 1 Section "Project Management and Coordination".
 - 2. Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
 - 3. Division 1 Section "Quality Requirements" for submitting test and inspection reports.
 - 4. Division 1 Section "Closeout Procedures" for submitting warranties.
 - 5. Division 1 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 6. Division 1 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 7. Division 1 Section "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.
 - 8. Divisions 2 through 34 Sections for specific requirements for submittals in those Sections.

1.3. DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's action. Submittals may be rejected for not complying with requirements.

1.4. SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals (See spec item 1.5 for conditions).
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

SECTION 013300 - SUBMITTAL PROCEDURES

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Submittals: All shop drawings and product data need to be submitted within 30 days after date of commencement of the Work.
- E. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
- F. Identification: Place a permanent label or title block on each submittal for identification.
 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.

SECTION 013300 - SUBMITTAL PROCEDURES

- k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
 - G. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
 - H. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - I. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
 - 1. Transmittal Form: Use attached form or Architect's approved form (facsimile of sample form at end of Section).
 - 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
 - J. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked "Approved, Approved as Corrected or Approved as Noted from Architect's action stamp."
 - K. Distribution:
 - 1. Furnish color copies of final submittals with mark indicating "Approved, Approved as Corrected or Approved as Noted from Architect's action stamp" to manufacturers, subcontractors, suppliers, fabricators, installers and authorities having jurisdiction and others as necessary for performance of construction activities. Show distribution on transmittal forms.
 - 2. Furnish four color copies of final submittals with mark indicating "Approved, Approved as Corrected or Approved as Noted from Architect's action stamp" to the Architect for distribution to the Owner, Clerk-of-the-Works, and the Architect and others as necessary for performance of construction activities. Show distribution on transmittal forms.
 - L. Use for Construction: Use only final submittals with mark indicating "Approved, Approved as Corrected or Approved as Noted from Architect's action stamp".
- 1.5. CONTRACTOR'S USE OF ARCHITECT'S CAD FILES
- A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:

SECTION 013300 - SUBMITTAL PROCEDURES

1. See Transfer of Document Form Spec Section 013310 for conditions and fee for use of Architect's CAD files.

PART 2. PRODUCTS

2.1. SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 1. Email electronic submittals as PDF electronic files directly to **Architect** for Project for review.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 5. Submit Product Data before or concurrent with Samples.
 6. Submit Product Data in the following format:
 - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard

printed data, **unless submittal based on Architect's digital data drawing files is otherwise permitted.**

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least **8-1/2 by 11 inches, but no larger than 30 by 42 inches.**
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected.

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Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit three sets of Samples. Architect will retain one Sample set; remainder will be returned. **Mark up and retain one returned Sample set as a project record sample.**
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
 5. Submit product schedule in the following format:
 - a. PDF electronic file.
- F. Coordination Drawing Submittals: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- G. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."
- I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
- J. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- K. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

SECTION 013300 - SUBMITTAL PROCEDURES

- M. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- N. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- O. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- P. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- R. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- S. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- T. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- U. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- V. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- W. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design

SECTION 013300 - SUBMITTAL PROCEDURES

criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2. DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit **digitally signed PDF electronic file** of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3. EXECUTION

3.1. CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2. ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. Approved: Fabrication/installation may be undertaken. Approval does not authorized changes to the Contract Sum or Contract Time.
 - 2. Approved as Corrected: Fabrication/installation may be undertaken. Approval does not authorized changes to the Contract Sum or Contract Time.
 - 3. Revise and Resubmit: Fabrication and/or installation MAY NOT be undertaken. In resubmitting, limit corrections to items marked.

SECTION 013300 - SUBMITTAL PROCEDURES

- 4. Rejected: Fabrication and/or installation MAY NOT be undertaken. In resubmitting, limit corrections to items marked.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION



AIA[®] Document G705[™] – 2001

List of Subcontractors

PROJECT: *(Name and address)*

DATE:

TO ARCHITECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

FROM CONTRACTOR: *(Name and Address)*

CONTRACTOR'S PROJECT NUMBER :

(List Subcontractors and others proposed to be employed on the above Project as required by the bidding documents.)

Work/Firm Name

Address/Phone

Superintendent

MDS | MARK
DESIGN
STUDIOS

ARCHITECT'S USE ONLY	
☐	Approved
☐	Approved as Noted
☐	Revise and Resubmit
☐	Rejected / Resubmit as Specified
☐	No Action Required
☐	Submittal Not Requested / Returned Without Review

Fabrication / installation may be undertaken. Approval does not authorize changes to the Contract Sum or Contract Time

Fabrication and/or installation **MAY NOT** be undertaken. In resubmitting, limit corrections to items marked.

Approval is only for general conformance with the design concept of the Project and the information given in the Contract Documents. Contractor is responsible for dimensions to be confirmed and correlated at the job site; information that pertains solely to the fabrication process or to the means and methods of construction; coordination of the work of all trades; coordination of the work in a safe manner. This approval does not modify Contractor's duty to comply with the Contract Documents.

Mark Design Studios Architecture, P.C.

BY: _____ **DATE:** _____

Office 270 North Broadway, Hicksville, New York 11801 T 516.827.0240 F 516-827-0224

Transfer of Documents



Date:

To:

From:

Project:

Mark Design Studios Architecture P.C., grants permission to use these files contingent upon compliance with the following provisions:

1. As author of the drawings, we retain all common law, statutory law, and other rights, including copyrights.
2. No other design professional or entity may be allowed use of these files.
3. We make no warranties, either expressed or implied, as to the fitness or applicability of these files for any particular purpose. We will not be held responsible for the accuracy or correctness of any documents produced using the information contained in these files.
4. Transfer of these files does not constitute their sale.
5. If these terms are acceptable, please sign and fax a return copy to MARK DESIGN STUDIOS
6. MDS will furnish the following electronic files under this agreement:

In consideration of the above agreement, a service fee of \$100.00 per sheet / drawing shall be remitted to MDS Architecture PC.

Signature:

Date:

Printed Name & Title:

Contractor Name:

MDS Representative:

Mark Design Studios Architecture, P.C.

Office 270 North Broadway, Hicksville, New York 11801 T 516-827-0240 F 516-827-0224

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section applies to all contractors.
- B. This Section includes administrative and procedural requirements for quality assurance and quality control.
- C. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- D. Related Sections include the following:
 - 1. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.
 - 2. Divisions 2 through 34 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

SECTION 014000 - QUALITY REQUIREMENTS

- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project (unless otherwise specified); being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the

SECTION 014000 - QUALITY REQUIREMENTS

form of a recent report on the inspection of the testing agency by a recognized authority.

- B. Reports: Prepare and submit certified written reports that include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.

SECTION 014000 - QUALITY REQUIREMENTS

2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- F. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- G. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work if required by product specification.
 - e. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect[, through Construction Manager], with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- H. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed, unless otherwise indicated.
- I. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 2 through 16 if laboratory mockups are required by product specification.

1.7 QUALITY CONTROL

SECTION 014000 - QUALITY REQUIREMENTS

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.

SECTION 014000 - QUALITY REQUIREMENTS

- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.8 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency or special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

1.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

SECTION 014000 - QUALITY REQUIREMENTS

1. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 014200 – REFERENCES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A This section applies to all contractors.

1.3 DEFINITIONS

- A General: Basic Contract definitions are included in the Conditions of the Contract.
- B "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H "Provide": Furnish and install, complete and ready for the intended use.
- I "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.4 INDUSTRY STANDARDS

- A Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

SECTION 014200 – REFERENCES

- C Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1 Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

- D Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the organizations responsible for the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA)	(800) 872-2253
	Architectural Barriers Act (ABA)	(202) 272-0080
	Accessibility Guidelines for Buildings and Facilities Available from Access Board www.access-board.gov	
CFR	Code of Federal Regulations	(866) 512-1800
	Available from Government Printing Office	(202) 512-1800
	www.gpoaccess.gov/cfr/index.html	
DOD	Department of Defense Military Specifications and Standards	(215) 697-6257
	Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	
FED-STD	Federal Standard (See FS)	
FS	Federal Specification	(215) 697-6257
	Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	
	Available from Defense Standardization Program www.dps.dla.mil	
	Available from General Services Administration www.gsa.gov	(202) 619-8925
	Available from National Institute of Building Sciences www.nibs.org	(202) 289-7800
FTMS	Federal Test Method Standard (See FS)	

SECTION 014200 – REFERENCES

MIL	(See MILSPEC)	
MIL-STD	(See MILSPEC)	
MILSPEC	Military Specification and Standards Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	(215) 697-6257
UFAS	Uniform Federal Accessibility Standards Available from Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080

1.5 ABBREVIATIONS AND ACRONYMS

A	Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."	
B	Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.	
AA	Aluminum Association, Inc. (The) www.aluminum.org	(703) 358-2960
AAADM	American Association of Automatic Door Manufacturers www.aaadm.com	(216) 241-7333
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials www.transportation.org	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists (The) www.aatcc.org	(919) 549-8141
ABAA	Air Barrier Association of America www.airbarrier.org	(866) 956-5888
ABMA	American Bearing Manufacturers Association www.abma-dc.org	(202) 367-1155
ACI	ACI International	(248) 848-3700

SECTION 014200 – REFERENCES

	(American Concrete Institute) www.aci-int.org	
ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The) www.aeic.org	(205) 257-2530
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association www.aga.org	(202) 824-7000
AGC	Associated General Contractors of America (The) www.agc.org	(703) 548-3118
AHA	American Hardboard Association (Now part of CPA)	
AHAM	Association of Home Appliance Manufacturers www.aham.org	(202) 872-5955
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
ISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)	
ALSC	American Lumber Standard Committee, Incorporated www.alsc.org	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
AOSA	Association of Official Seed Analysts, Inc. www.aosaseed.com	(505) 522-1437

SECTION 014200 – REFERENCES

APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA	Architectural Precast Association www.archprecast.org	(239) 454-6989
API	American Petroleum Institute www.api.org	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association www.asphaltroofing.org	(202) 207-0917
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (973) 882-1170
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9585
AWCI	AWCI International (Association of the Wall and Ceiling Industry International) www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (Now WCSC)	
AWI	Architectural Woodwork Institute www.awinet.org	(800) 449-8811 (703) 733-0600
AWPA	American Wood-Preservers' Association www.awpa.com	(334) 874-9800
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122

SECTION 014200 – REFERENCES

BIA	Brick Industry Association (The) www.bia.org	(703) 620-0010
BICSI	BICSI www.bicsi.org	(800) 242-7405 (813) 979-1991
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International) www.bifma.com	(616) 285-3963
BISSC	Baking Industry Sanitation Standards Committee www.bissc.org	(866) 342-4772
CCC	Carpet Cushion Council www.carpetcushion.org	(203) 637-1312
CDA	Copper Development Association www.copper.org	(800) 232-3282 (212) 251-7200
CEA	Canadian Electricity Association www.canelect.ca	(613) 230-9263
CFFA	Chemical Fabrics & Film Association, Inc. www.chemicalfabricsandfilm.com	(216) 241-7333
CGA	Compressed Gas Association www.cganet.com	(703) 788-2700
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute www.chainlinkinfo.org	(301) 596-2583
CPA	Composite Panel Association www.pbmdf.com	(301) 670-0604
CPPA	Corrugated Polyethylene Pipe Association www.cppa-info.org	(800) 510-2772 (202) 462-9607
CRI	Carpet & Rug Institute (The) www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200

SECTION 014200 – REFERENCES

CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(866) 797-4272 (416) 747-4000
CSI	Cast Stone Institute www.caststone.org	(770) 972-3011
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau www.cedarbureau.org	(604) 820-7700
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute) www.cti.org	(281) 583-4087
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIA	Electronic Industries Alliance www.eia.org	(703) 907-7500
EIMA	EIFS Industry Members Association www.eima.com	(800) 294-3462 (770) 968-7945
EJCDC	Engineers Joint Contract Documents Committee www.ejdc.org	(703) 295-5000
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
ESD	ESD Association www.esda.org	(315) 339-6937
FIBA	Federation Internationale de Basketball Amateur (The International Basketball Federation) www.fiba.com	41 22 545 00 00
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation) www.fivb.ch	41 21 345 35 35
FMG	FM Global (Formerly: FM - Factory Mutual System) www.fmglobal.com	(401) 275-3000
FMRC	Factory Mutual Research (Now FMG)	
FSA	Fluid Sealing Association www.fluidsealing.com	(610) 971-4850
FSC	Forest Stewardship Council	49 228 367 66 0

SECTION 014200 – REFERENCES

	www.fsc.org	
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANA	Glass Association of North America www.glasswebsite.com	(785) 271-0208
GRI	(Now GSI)	
GS	Green Seal www.greenseal.org	(202) 872-6400
GSI	Geosynthetic Institute www.geosynthetic-institute.org	(610) 522-8440
HI	Hydraulic Institute www.pumps.org	(888) 786-7744 (973) 267-9700
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
HPW	H. P. White Laboratory, Inc. www.hpwhite.com	(410) 838-6550
IAS	International Approval Services (Now CSA International)	
IBF	International Badminton Federation www.intbadfed.org	(6-03) 9283-7155
ICEA	Insulated Cable Engineers Association, Inc. www.icea.net	(770) 830-0369
ICRI	International Concrete Repair Institute, Inc. www.icri.org	(847) 827-0830
IEC	International Electrotechnical Commission www.iec.ch	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IESNA	Illuminating Engineering Society of North America www.iesna.org	(212) 248-5000
IEST	Institute of Environmental Sciences and Technology www.iest.org	(847) 255-1561

SECTION 014200 – REFERENCES

IGCC	Insulating Glass Certification Council www.igcc.org	(315) 646-2234
IGMA	Insulating Glass Manufacturers Alliance www.igmaonline.org	(613) 233-1510
ISO	International Organization for Standardization www.iso.ch	41 22 749 01 11
	Available from ANSI www.ansi.org	(202) 293-8020
ISSFA	International Solid Surface Fabricators Association www.issfa.net	(877) 464-7732 (702) 567-8150
ITS	Intertek www.intertek.com	(800) 345-3851 (713) 407-3500
ITU	International Telecommunication Union www.itu.int/home	41 22 730 51 11
KCMA	Kitchen Cabinet Manufacturers Association www.kcma.org	(703) 264-1690
LMA	Laminating Materials Association (Now part of CPA)	
LPI	Lightning Protection Institute www.lightning.org	(800) 488-6864 (804) 314-8955
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MFMA	Maple Flooring Manufacturers Association, Inc. www.maplefloor.org	(847) 480-9138
MFMA	Metal Framing Manufacturers Association www.metalframingmfg.org	(312) 644-6610
MH	Material Handling (Now MHIA)	
MHIA	Material Handling Industry of America www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America www.marble-institute.com	(440) 250-9222
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.	(703) 281-6613

SECTION 014200 – REFERENCES

	www.mss-hq.com	
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(312) 332-0405
NACE	NACE International (National Association of Corrosion Engineers International) www.nace.org	(800) 797-6623 (281) 228-6200
NADCA	National Air Duct Cleaners Association www.nadca.com	(202) 737-2926
NAGWS	National Association for Girls and Women in Sport www.aahperd.org/nagws/	(800) 213-7193, ext. 453
NAIMA	North American Insulation Manufacturers Association www.naima.org	(703) 684-0084
NBGQA	National Building Granite Quarries Association, Inc. www.nbgqa.com	(800) 557-2848
NCAA	National Collegiate Athletic Association (The) www.ncaa.org	(317) 917-6222
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NCPI	National Clay Pipe Institute www.ncpi.org	(262) 248-9094
NCTA	National Cable & Telecommunications Association www.ncta.com	(202) 775-3550
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NelMA	Northeastern Lumber Manufacturers' Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(888) 300-6382 (303) 697-8441
NFHS	National Federation of State High School Associations www.nfhs.org	(317) 972-6900
NFPA	NFPA (National Fire Protection Association)	(800) 344-3555 (617) 770-3000

SECTION 014200 – REFERENCES

	www.nfpa.org	
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NGA	National Glass Association www.glass.org	(866) 342-5642 (703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association) www.nofma.org	(901) 526-5016
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010
NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo & Mosaic Association, Inc. (The) www.ntma.com	(800) 323-9736 (540) 751-0930
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)	
NWWDA	National Wood Window and Door Association (Now WDMA)	
OPL	Omega Point Laboratories, Inc. (Acquired by ITS - Intertek) www.opl.com	(800) 966-5253 (210) 635-8100
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
PDCA	Painting & Decorating Contractors of America www.pdca.com	(800) 332-7322 (314) 514-7322
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (978) 557-0720
PGI	PVC Geomembrane Institute http://pgi-tp.ce.uiuc.edu	(217) 333-3929

SECTION 014200 – REFERENCES

PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America) www.landcarenetwork.org	(800) 395-2522 (703) 736-9666
PTI	Post-Tensioning Institute www.post-tensioning.org	(602) 870-7540
RCSC	Research Council on Structural Connections www.boltcouncil.org	(800) 644-2400 (312) 670-2400
RFCI	Resilient Floor Covering Institute www.rfci.com	(301) 340-8580
RIS	Redwood Inspection Service www.calredwood.org	(888) 225-7339 (415) 382-0662
RTI	(Formerly: NTRMA - National Tile Roofing Manufacturers Association) (Now TRI)	
SAE	SAE International www.sae.org	(877) 606-7323 (724) 776-4841
SDI	Steel Deck Institute www.sdi.org	(847) 458-4647
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabs.com	(516) 294-5424
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SIA	Security Industry Association www.siaonline.org	(703) 683-2075
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)	
SJI	Steel Joist Institute www.steeljoist.org	(843) 626-1995
SMA	Screen Manufacturers Association www.smacentral.org	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SMPTE	Society of Motion Picture and Television Engineers	(914) 761-1100

SECTION 014200 – REFERENCES

	www.smpete.org	
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) www.sprayfoam.org	(800) 523-6154
SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SPRI	Single Ply Roofing Industry www.spri.org	(781) 647-7026
SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333
SWRI	Sealant, Waterproofing, & Restoration Institute www.swrionline.org	(816) 472-7974
TCA	Tile Council of America, Inc. www.tileusa.com	(864) 646-8453
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org	(703) 907-7700
TMS	The Masonry Society www.masonrysociety.org	(303) 939-9700
TPI	Truss Plate Institute, Inc. www.tpinst.org	(703) 683-1010
TPI	Turfgrass Producers International www.turfgrassod.org	(847) 649-5555
TRI	Tile Roofing Institute (Formerly: RTI - Roof Tile Institute) www.tilerroofing.org	(312) 670-4177
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902

SECTION 014200 – REFERENCES

USGBC	U.S. Green Building Council www.usgbc.org	(202) 828-7422
USITT	United States Institute for Theatre Technology, Inc. www.usitt.org	(800) 938-7488 (315) 463-6463
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association (Now WCSC)	
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association) www.windowcoverings.org	(800) 506-4636 (212) 297-2109
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

- 1.6 Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

BOCA	BOCA International, Inc. (See ICC)	
IAPMO	International Association of Plumbing and Mechanical Officials www.iapmo.org	(909) 472-4100
ICBO	International Conference of Building Officials (See ICC)	
ICBO ES	ICBO Evaluation Service, Inc. (See ICC-ES)	
ICC	International Code Council www.iccsafe.org	(888) 422-7233 (703) 931-4533
ICC-ES	ICC Evaluation Service, Inc. www.icc-es.org	(800) 423-6587 (562) 699-0543

SECTION 014200 – REFERENCES

SBCCI Southern Building Code Congress International, Inc.
 (See ICC)

- 1.7 Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers www.usace.army.mil	
CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-7923
DOC	Department of Commerce www.commerce.gov	(202) 482-2000
DOD	Department of Defense http://.dodssp.daps.dla.mil	(215) 697-6257
DOE	Department of Energy www.energy.gov	(202) 586-9220
EPA	Environmental Protection Agency www.epa.gov	(202) 272-0167
FAA	Federal Aviation Administration www.faa.gov	(866) 835-5322
FCC	Federal Communications Commission www.fcc.gov	(888) 225-5322
FDA	Food and Drug Administration www.fda.gov	(888) 463-6332
GSA	General Services Administration www.gsa.gov	(800) 488-3111
HUD	Department of Housing and Urban Development www.hud.gov	(202) 708-1112
LBL	Lawrence Berkeley National Laboratory www.lbl.gov	(510) 486-4000
NCHRP	National Cooperative Highway Research Program (See TRB)	
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
OSHA	Occupational Safety & Health Administration www.osha.gov	(800) 321-6742 (202) 693-1999
PBS	Public Building Service	

SECTION 014200 – REFERENCES

(See GSA)

PHS	Office of Public Health and Science www.osophs.dhhs.gov/ophs	(202) 690-7694
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
SD	State Department www.state.gov	(202) 647-4000
TRB	Transportation Research Board www.nas.edu/trb	(202) 334-2934
USDA	Department of Agriculture www.usda.gov	(202) 720-2791
USPS	Postal Service www.usps.com	(202) 268-2000

- 1.8 State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1. GENERAL

1.1. RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2. SUMMARY

- A. This section applies to all contractors.
- B. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- C. Related Sections include the following:
 - 1. Division 1 Section "Summary" for limitations on utility interruptions and other work restrictions.
 - 2. Division 1 Section "Summary of Single Contract" for responsibilities for temporary facilities and controls.
 - 3. Division 1 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
 - 4. Division 1 Section "Execution" for progress cleaning requirements.
 - 5. Division 31 Section "Dewatering" for disposal of ground water at Project site.
 - 6. Division 32 Section "Asphalt Concrete Paving" for construction and maintenance of asphalt paving for temporary roads and paved areas.

1.3. DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4. USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, **Owner's construction forces**, Architect, **occupants of Project**, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations provided said use is not being abused by the Contractor.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations provided said use is not being abused by the Contractor.
- D.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

1.5. INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

1.6. QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in **the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.**

1.7. PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2. PRODUCTS

2.1. MATERIALS

- A. Pavement: Comply with Division 2 Section "Asphalt Concrete Paving".
- B. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

- C. Portable Chain-Link Fencing: Minimum 2-inch, 9-gauge, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide galvanized steel bases for supporting posts. Provide sand bags to hold portable fencing.
- D. Orange Diamond Safety Fencing (Snow Fence): 4'-0" high, high density polyethylene. Install fencing using 5'-0" high T posts every 6'-0" to 8'-0".
- E. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
- F. Gypsum Board: Minimum 5/8 inch thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.
- G. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- H. Paint: Comply with requirements in Division 9 painting Sections.

2.2. EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3. EXECUTION

3.1. INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance as specified in Division 1 Section "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2. TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system or private system indicated as directed by authorities having jurisdiction.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

- C. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 - 1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
- D. Sanitary Facilities: The Site Contractor shall provide for the workmen a suitable toilet and wash facilities in a proper location, until the building is completed, when it will be removed and the site cleaned, graded and restored. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- F. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
- G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.3. SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Maintain support facilities until Substantial Completion. Remove support facilities after Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.
- E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Existing Elevator Use: Use of Owner's existing elevators will be permitted, as long as elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
 - 1. Do not load elevators beyond their rated weight capacity.
 - 2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
- G. Existing Stair Usage: Use of Owner's existing stairs will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4. SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Division 01 Section "Summary."
- C. Temporary Erosion and Sedimentation Control: Comply with **requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and** requirements specified in Division 31 Section "Site Clearing."
- D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

- E. Site Enclosure Fence: **Before construction operations begin Site Contractor**, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: **As indicated on Drawing.**
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. **Furnish two sets of keys to Owner.**
- F. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- H. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- J. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by **Owner** from fumes and noise.
 - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
 - 2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 - 3. Insulate partitions to control noise transmission to occupied areas.
 - 4. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
 - 5. Protect air-handling equipment.
 - 6. Provide walk-off mats at each entrance through temporary partition.
- K. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5. OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."

END OF SECTION

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section applies to all contractors.
- B. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable /equal products.
- C. Related Sections include the following:
 - 1. Article 6(X) of the General Conditions for Substitution Requirements.
 - 2. Division 1 Section "Equivalents" at Article 6(W) of the General Conditions for additional requirements.
 - 3. Division 1 Section "Allowances" for products selected under an allowance.
 - 4. Division 1 Section "Alternates" for products selected under an alternate.
 - 5. Division 1 Section "References" for applicable industry standards for products specified.
 - 6. Division 1 Section "Closeout Procedures" for submitting warranties for Contract closeout.
 - 7. Divisions 2 through 34 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable / Equal Products: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in project schedule, products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. See Article 6(X) of the General Conditions for additional requirements.

SECTION 016000 - PRODUCT REQUIREMENTS

- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable / Equal products of other named manufacturers.

1.4 VARIATIONS FROM SPECIFIED STANDARDS: (or EQUAL)

- A. Where some particular product or device is specified by brand name or manufacturer, it is to be considered standard and that if approved equal, items of other manufacturer than those mentioned may be used upon written approval of the Architect. In the specifications, many items are preceded or followed by the phrase "or approved equal" and many others are not. The absence of that phrase is not to be interpreted as in derogation of the provisions of this paragraph. See "Information For Bidders, EQUIVALENTS" for additional requirements prior to award of contracts.

1.5 PRODUCT REQUIREMENTS

- A. At the end of the project, all Contractor's must certify that all work of this contract has been fully completed in accordance with the plans and specifications for this contract and that all materials installed contain "NO" asbestos or lead. See form 017700F2 Asbestos Certification Form that is required to be signed and submitted with all the closeout documents.

1.6 SUBMITTALS

- A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
 - 1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
 - 2. Form: Tabulate information for each product under the following column headings:
 - a. Specification Section number and title.
 - b. Generic name used in the Contract Documents.
 - c. Proprietary name, model number, and similar designations.
 - d. Manufacturer's name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date or time span of delivery period.
 - h. Identification of items that require early submittal approval for scheduled delivery date.
 - 3. Completed List: Within 15 days after date of commencement of the Work, submit 4 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
 - 4. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

SECTION 016000 - PRODUCT REQUIREMENTS

- B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use attached form or form approved by Architect.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.
 - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 4. If the approved product (substitution) results in additional cost to other contractors, a deduct change order will be issued to cover the cost of the work of the other contractors.
- C. Comparable Product / Equal Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

SECTION 016000 - PRODUCT REQUIREMENTS

1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable / equal product request. Architect will notify Contractor of approval or rejection of proposed comparable / equal product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
- D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.7 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.8 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
 1. Store products to allow for inspection and measurement of quantity or counting of units.
 2. Store materials in a manner that will not endanger Project structure.
 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 4. Store cementitious products and materials on elevated platforms.
 5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

SECTION 016000 - PRODUCT REQUIREMENTS

6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

1.9 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents. **Guarantees shall conform to the General Conditions at a minimum unless the specifications require the guarantee shall be for a longer period of time.**
 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 3. Refer to Divisions 2 through 34 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 PRODUCTS

1.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

SECTION 016000 - PRODUCT REQUIREMENTS

7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable / Equal Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
 - a. Substitutions/equals will be considered for approval, unless noted otherwise in the specification section.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
 - a. Substitutions/equals will be considered for approval, unless noted otherwise in the specification section.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
6. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable / equal product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable / Equal Products" Article for consideration of an unnamed product by the other named manufacturers.
7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
8. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

SECTION 016000 - PRODUCT REQUIREMENTS

1.2 COMPARABLE / EQUAL PRODUCTS - VARIATIONS FROM SPECIFIED STANDARDS

- A. Where some particular product or device is specified by brand name or manufacturer, it is to be considered standard and that if approved equal, items of other manufacturer than those mentioned may be used upon written approval of the Architect. In the specifications, many items are preceded or followed by the phrase "or approved equal" and many others are not. The absence of that phrase is not to be interpreted as in derogation of the provisions of this paragraph. See Instructions to Bidders, EQUIVALENTS, for additional requirements prior to award of contracts and Article 6(W) of the General Conditions of the Contract for Construction.
- B. Conditions: Architect will consider Contractor's request for comparable /equal product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

PART 3 EXECUTION (Not Used)

END OF SECTION

SUBSTITUTION REQUEST (After the Bidding Phase)

Project: _____ Substitution Request Number: _____

From: _____
To: _____ Date: _____

A/E Project Number: _____
Re: _____ Contract For: _____

Specification Title: _____ Description: _____
Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____ Address: _____ Phone: _____
Trade Name: _____ Model No.: _____
Installer: _____ Address: _____ Phone: _____
History: ☐ New product ☐ 2-5 years old ☐ 5-10 yrs old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

☐ Point-by-point comparative data attached - REQUIRED BY A/E

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Architect: _____
Address: _____ Owner: _____
_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

Savings to Owner for accepting substitution: (\$ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

**SUBSTITUTION
REQUEST
(Continued)**

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made by the Contractor for changes to building design, including A/E design, detailing, and construction costs incurred as a result of any substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.
- The Contractor is referred to Article 6(X) of the General Conditions for substitution requirements.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

Attachments: _____

A/E's REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Section 01330.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by:

Date:

Additional Comments: ☐ Contractor ☐ Subcontractor ☐ Supplier ☐ Manufacturer ☐ A/E ☐ _____

SECTION 017300 – EXECUTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1 Construction layout.
 - 2 Field engineering and surveying.
 - 3 Installation of the Work.
 - 4 Cutting and patching.
 - 5 Coordination of Owner-installed products.
 - 6 Progress cleaning.
 - 7 Starting and adjusting.
 - 8 Protection of installed construction.
 - 9 Correction of the Work.
- B Related Requirements:
 - 1 Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 2 Division 02 Section "Selective Structure Demolition" for demolition and removal of selected portions of the building.
 - 3 Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.3 DEFINITIONS

- A Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

- A Qualification Data: For [land surveyor] [professional engineer].
- B Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- D Certified Surveys: Submit two copies signed by land surveyor.
- E Final Property Survey: Submit 5 copies showing the Work performed and record survey data.

SECTION 017300 – EXECUTION

1.5 QUALITY ASSURANCE

- A Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1 Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2 Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
 - a Primary operational systems and equipment.
 - b Fire separation assemblies.
 - c Air or smoke barriers.
 - d Fire-suppression systems.
 - e Mechanical systems piping and ducts.
 - f Control systems.
 - g Communication systems.
 - h Fire-detection and -alarm systems.
 - i Electrical wiring systems.
 - j Operating systems of special construction.
 - 3 Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 - 4 Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's or Owner's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 PRODUCTS

3.1 MATERIALS

- A General: Comply with requirements specified in other Sections.
- B In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1 If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect and Owner for the visual and functional performance of in-place materials.

SECTION 017300 – EXECUTION

PART 3 EXECUTION

3.1 EXAMINATION

- A Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1 Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2 Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1 Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2 Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3 Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1 Description of the Work.
 - 2 List of detrimental conditions, including substrates.
 - 3 List of unacceptable installation tolerances.
 - 4 Recommended corrections.
- D Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A Existing Utility Information: Furnish information to Owner and Architect that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

SECTION 017300 – EXECUTION

- D Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly in writing.
- B General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1 Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2 Establish limits on use of Project site.
 - 3 Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4 Inform installers of lines and levels to which they must comply.
 - 5 Check the location, level and plumb, of every major element as the Work progresses.
 - 6 Notify Architect in writing when deviations from required lines and levels exceed allowable tolerances.
 - 7 Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C Site Improvements: Not Used.
- D Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A Not Used.

3.5 INSTALLATION

- A General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1 Make vertical work plumb and make horizontal work level.
 - 2 Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3 Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

SECTION 017300 – EXECUTION

- 4 Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- B Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1 Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2 Allow for building movement, including thermal expansion and contraction.
 - 3 Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 PROGRESS CLEANING

- A General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1 Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2 Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).

SECTION 017300 – EXECUTION

- 3 **Hazardous and unsanitary waste materials are to be immediately removed from the premises and may not be stored on site under any circumstances.**
Mark containers appropriately and dispose of legally, according to regulations.
 - 4 Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B Site: Maintain Project site free of waste materials and debris.
- C Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
- 1 Remove liquid spills promptly.
 - 2 Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls."
- H During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

- A Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

SECTION 017300 – EXECUTION

- C Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 017329 - CUTTING AND PATCHING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section applies to all contractors.
- B. Each contractor shall bear the cost of cutting and patching required by and for his work, unless noted otherwise on their drawings.
- C. This Section includes procedural requirements for cutting and patching.
- D. It is the intent of the specifications that at the completion of the work, all indications of cutting and patching shall be as inconspicuous as the materials involved will permit and that the spaces in which the work is done will have a finished appearance.
- E. The drawings and/or specifications indicate the general extent of the work to be done; however, the notations on the drawings and specifications shall not be taken as a complete description of the work. Additional work may be required.
- F. Finishes shown on the drawings are finishes that shall exist after completion of construction.
- G. Where existing and new work join as at connection of pavement, corridors, door and wall openings, etc., finishes shall be brought together in proper alignment. Remove existing materials or provide new materials as required.
- H. All construction work including, but not limited to new work, patch work, and existing work (noted on the drawings to be refinished) shall be finished as specified for new work. Patch work shall match adjacent finishes, and all existing surfaces to receive new finishes shall have all loose material removed and surfaces thoroughly cleaned prior to application of new materials.
- I. Where existing equipment is removed patch to match adjacent construction.
- J. Related Sections include the following:
 - 1. Divisions 2 through 34 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
 - 2. Division 7 Section "Through-Penetration Firestop Systems" for patching fire-rated construction.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other work or removal of existing work.

SECTION 017329 - CUTTING AND PATCHING

1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Existing Roof Work: Cutting and patching of existing roof surfaces and structures shall only be performed by a qualified (licensed) roofing contractor, as approved by the Architect. The contractor shall insure that the existing roof warranties remain in force. (Note: Roofing Contractor shall hold a current and valid installers license by manufacturer of primary roofing materials)

1.5 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

1.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

SECTION 017329 - CUTTING AND PATCHING

PART 3 EXECUTION

1.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

1.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

1.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of

SECTION 017329 - CUTTING AND PATCHING

- pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
- 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

SECTION 017400 - PRE-OCCUPANCY CLEANING, BUILDING EXTERIOR and SITE CLEANING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A Drawings and general provisions of the Contract, including General and other Division 1 Specification Sections, apply to this Section.

PART 2 PRODUCTS

- 1.1 Use Green-building products for cleaning when ever possible.

PART 3 EXECUTION

- 1.1 General Contractor responsible for cleaning interior of building and exterior of building at new canopy locations. Site Contractor is responsible for all site cleaning except at new canopy locations.
- 1.2 All cleaning shall be performed according to manufacturer's instructions for the item being cleaned -no chemicals or solutions shall be brought onto Owner property without the contractor first supplying an MSDS sheet for Owner review -items damaged, stained, or marred as a result of the cleaning process or cleaning agents used shall be repaired or replaced at no cost to the Owner -use of cleaning agents with highly aromatic or pungent odors shall be scheduled for second or third shift and coordinated with the Owner.
- 1.3 Perform the pre-occupancy cleaning when directed by the Architect or Owner's Representative.
- 1.4 Pre-Occupancy Cleaning Sequence:
 - A Begin pre-occupancy cleaning operations at the top floor and proceed down to the lowest floor. Complete the cleaning required on each floor before proceeding to the next floor.
 - B Perform the pre-occupancy cleaning within the minimum standards specified, including but not limited to the following requirements.
 - 1 Floor Maintenance:
 - a Do not splash, disfigure, or damage baseboards, walls, stair risers, furniture or equipment during these operations. Take proper precautions to advise building occupants of wet / slippery floor conditions during the cleaning operations. Be responsible for the security of equipment, materials, tools, etc. The Owner's Representative (if space is available) will assign storage area(s) for the neat storage of tools and equipment.
 - 2 Sweeping and Damp Mopping:
 - a Thoroughly sweep the floors to remove visible dirt and debris. Remove all visible paint marks, wads of gum, tar and similar substances from the floor surface. After sweeping and damp mopping operations, all floors shall be clean and free of dirt streaks; no dirt shall be left in corners, behind radiators, under furniture, behind doors, on stair landings and treads. Entrances and all similar areas shall be swept clean of all dirt and trash. No dirt shall be left where sweepings have been picked up. There shall be no dirt, trash or foreign matter under desks, tables, chairs, etc.

SECTION 017400 - PRE-OCCUPANCY CLEANING, BUILDING EXTERIOR and SITE CLEANING

- 3 Dusting:
 - a Do not move dust from spot to spot, but remove directly from the areas in which it lies by the most effective means such as appropriately treated dusting cloths, vacuum tools, etc. When doing high cleaning, dust shall not be allowed to fall from high areas onto furniture and equipment below. The following conditions shall exist after the completion of each dusting task:
 - 1) There shall be no dust streaks.
 - 2) Corners, crevices, moldings, and ledges shall be free of all dust.
 - 3) There shall be no oils, spots or smudges on dusted surfaces caused by dusting tools.
 - 4) When inspected by a flashlight, there shall be few traces of dust on any surface.
- 4 Damp Wiping:
 - a Use a clean damp cloth or sponge to remove all dirt, spots, streaks and smudges from walls, doors (both wood and metal), glass and other specified surfaces. When dry, the surfaces shall have a polished appearance. The wetting solution shall contain an appropriate cleaning agent. When damp wiping in toilet areas, a multi-purpose (disinfectant-deodorizer) cleaner shall be used.
- 5 Bright Metal Polishing:
 - a Polish bright metal by damp wiping and drying with a suitable cloth. If a polished appearance is not thereby produced, apply the appropriate metal polish.
- 6 Glass:
 - a Wash and clean all interior and exterior glass, with the inside and outside cleaning of windows to be performed on the same day.
 - b After each washing operation, all glass shall be clean and free of dirt, grime, streaks, excessive moisture and shall not be cloudy.
 - c Window sills, sash and woodwork about interior glass and other such surroundings shall be thoroughly wiped free of drippings and other watermarks.
 - d Cleaners shall use pads to protect window sills when placing cleaning materials on them and all such pads and/or cloths necessary to protect the property shall be furnished by the Contractor. Window sills are not be to utilized in lieu of ladders and/or stepladders.
 - e Extreme care shall be taken in opening any and all windows, when opening them for cleaning, assume full responsibility for damage to glass and painted surfaces.
- 7 Spot Cleaning:
 - a Following this operation, smudges, marks or spots shall have been removed from the designated areas without causing unsightly discoloration.
- 8 Trash Removal:
 - a Collect and remove all refuse, debris, rubbish and trash throughout the entire building. Unless otherwise directed by the Owner's Representative all collected matter shall be deposited in dumpsters of sanitation trucks provided by the Contractor, and removed from the site.
 - b Collect and remove all refuse, debris, rubbish and trash from the interior of the air handling unit enclosures under each window or wherever located. Vacuum the interior of each unit. This will require the removal and replacement of cover plates. Personnel will be

SECTION 017400 - PRE-OCCUPANCY CLEANING, BUILDING EXTERIOR and SITE CLEANING

- made available to demonstrate the proper procedure for the removal and replacement of the cover plates.
- 9 Equipment:
- a Thoroughly scour, wash and disinfect all equipment and fixtures, including, but not limited to toilet bowls, seats, urinals, wash basins, mirrors, shelving, dispensers, receptors, slop sinks, water fountains, kitchen equipment, refrigerators and booth partitions, various dispensers, walk-in refrigerators, and lockers.
- 10 Light fixtures, including glass and plastic lenses, ceiling and wall mounted lights, cover panels, side panels, louvers, fixture frames and lamps, shall be vacuumed and cleaned with a damp cloth.
- 11 Supply vents, exhaust grilles and room fan coil units shall be thoroughly vacuumed and cleaned.
- 12 Metal Doors:
- a Remove protective tape from doors, frames and signage and kickplates. Remove all tape and adhesive residues. Clean and polish all unpainted metal on doors, including, but not limited to, trim, hardware, kickplates, handplates and door knobs. Wood doors shall be thoroughly cleaned and oiled and wiped dry.
- 13 Walls:
- a Dust and spot clean painted / vinyl-covered walls. In areas where spot cleaning will produce color differences, the entire wall shall be washed, cleaned and wiped dry.
- b Scrub ceramic tile walls with a germicidal cleaner, rinse and wipe dry.
- c Vacuum brick and concrete interior walls and all adhered debris shall be removed in accordance with guidelines established by the National Concrete Institute and the National Concrete Masonry Association.
- 14 Entrances:
- a Thoroughly sweep, vacuum and wash entrances with a germicidal cleaner.
- 15 Other:
- a Overhead items, such as louvers, grilles, pipes, molding, etc., shall be dusted, vacuumed and spot cleaned.
- b Metal surfaces such as hardware, frames, cover plates, stainless steel counters and sinks, corner guards, conveyors, etc., shall be cleaned with a damp cloth and polished where required.
- c Furniture and equipment shall be wiped clean using special care, be responsible for damage to this equipment. Where the workers see a piece of equipment too delicate or have doubt regarding how to proceed, they will request further instructions from the Owner's Representative.
- d For all operations where furniture or equipment is moved, no chairs, waste baskets or other similar items shall be stacked on desks, tables or window sills. Upon completion of work, all furniture and equipment must be returned to its original position.
- e Under no circumstances shall any product or procedure be used that may leave a non-conductive film.
- 16 Safety Standards:
- a Conform to all Federal, State and Local Codes and Safety Standards and to the best practices of the trade.
- 17 Building Exterior and Site Cleaning Sequence:
- a General: Provide building exterior and site cleaning. Conduct cleaning and waste-removal operations to comply with local laws

SECTION 017400 - PRE-OCCUPANCY CLEANING, BUILDING EXTERIOR and SITE CLEANING

- and ordinances and Federal and local environmental and antipollution regulations.
- 18 Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
- a Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e Remove snow and ice to provide safe access to building.
 - f Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g Remove debris and surface dust from limited access spaces, including roofs, manholes, and similar spaces.
 - h Clean transparent materials, including glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - i Remove labels that are not permanent.
 - j Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - k Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
- C Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1. GENERAL

1.1. RELATED DOCUMENTS

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

1.2. SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning. See spec section 017400 "Pre-Occupancy Cleaning, Building Exterior and Site Cleaning".
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Refer to General Conditions, Article 15 for additional requirements related to contract closeout.
 - 2. Division 01 Section "Execution" for progress cleaning of Project site.
 - 3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 4. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 5. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
 - 6. Divisions 02 through 34 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3. ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4. CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.5. MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

SECTION 017700 - CLOSEOUT PROCEDURES

1.6. SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of **10** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Divisions 02 through 34 Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Divisions 02 through 34 Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 - a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
 - 5. Submit test/adjust/balance records.
 - 6. Submit sustainable design submittals required in Division 01 sustainable design requirements Section and in individual Division 02 through 33 Sections.
 - 7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of **10** days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Advise Owner of pending insurance changeover requirements.
 - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 3. Complete startup and testing of systems and equipment.
 - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training."
 - 6. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 - 7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 8. Complete final cleaning requirements, including touchup painting.

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9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of **10** days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.7. FINAL COMPLETION PROCEDURES

- A. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8. LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. **Use CSI Form 14.1A or similar.**
 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Page number.
 4. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect will return annotated file.

1.9. SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

SECTION 017700 - CLOSEOUT PROCEDURES

- B. Partial Occupancy: Submit properly executed warranties within **15** days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2. PRODUCTS

2.1. MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3. EXECUTION

3.1. REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.

SECTION 017700 - CLOSEOUT PROCEDURES

2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

PART 4. DOCUMENTATION REQUIRED FOR PROJECT CLOSEOUT

1. Release of Liens.
2. Affidavit listing all sub-contractors and suppliers.
3. Affidavit certifying payment of bills for material and labor, and any other indebtedness connected with the work.
4. Consent of surety to final payment.
5. Maintenance Bond – three (3) years from substantial completion
6. Approvals from Board of Underwriters for all electrical work only.
7. Guarantees - Before issuance of final certificates, each contractor shall deliver to the Owner the following guarantee in addition to those specifically called for in the technical specifications:
8. The Contractor hereby guaranteed that all materials and workmanship installed under his respective contract to be new and of good quality in every respect and to remain so for a period of three (3) years or longer if provided for in the Specifications from the date of issuance of the Final Certificate by the Architect.
9. Should any defects develop in the aforesaid work within the stipulated periods due to faults in materials and/or workmanship, the Contractor hereby agrees to make all repairs and necessary work to correct the defective parts. Such repairs and corrective work shall be done without any cost to the Owner and at the expense of the Contractor within five (5) days after notice to the Contractor by the Owner.
10. In case the Contractor fails to do the work so ordered, the Owner may have the work done and charge the cost thereof against the monies retained, if the monies retained shall be insufficient to pay such cost, or no money is available, the Contractor and/or his sureties, agree to pay the Owner the cost of such work.
11. Affidavit certifying that no asbestos containing material has either been built into the work or was present in any of the equipment used in any process of the construction.
12. As-built drawings, full size and electronic, (3) copies. (See Section 017839)

SECTION 017700 - CLOSEOUT PROCEDURES

13. Training and Instruction for District Staff at startup of all systems.
14. Manifest listing all attic stock materials (including type and quantity) turned over to the owner, signed and dated by owner's representative upon receipt of materials.

END OF SECTION



**MARK
DESIGN
STUDIOS**

PUNCH LIST

Project: _____

From (A/E): _____

Site Visit Date: _____

To (Contractor): _____

A/E Project Number: _____

Contract For: _____

The following items require the attention of the Contractor for completion or correction. This list may not be all-inclusive, and the failure to include any items on this list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

[illegible]

☐ Attachments

Signed by: _____ Date: _____

[illegible]



AIA[®] Document G706[™] – 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER ☐

CONTRACT FOR:

ARCHITECT ☐

CONTRACTOR ☐

TO OWNER: *(Name and address)*

CONTRACT DATED:

SURETY ☐

OTHER ☐

STATE OF:

COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707[™], Consent of Surety to Final Payment, may be used for this purpose.

Indicate attachment: ☐ Yes ☐ No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof
3. Contractor's Affidavit of Release of Liens (AIA Document G706A[™])

CONTRACTOR: *(Name and address)*

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

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AIA[®] Document G706A[™] – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER ☐

CONTRACT FOR:

ARCHITECT ☐

CONTRACTOR ☐

TO OWNER: *(Name and address)*

CONTRACT DATED:

SURETY ☐

OTHER ☐

STATE OF:

COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.



AIA[®] Document G707[™] – 1994

Consent of Surety to Final Payment

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER ☐

CONTRACT FOR:

ARCHITECT ☐

CONTRACTOR ☐

TO OWNER: *(Name and address)*

CONTRACT DATED:

SURETY ☐

OTHER ☐

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

on bond of
(Insert name and address of Contractor)

, SURETY,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to
(Insert name and address of Owner)

, CONTRACTOR,

as set forth in said Surety's bond.

, OWNER,

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

(Surety)

(Signature of authorized representative)

Attest:
(Seal)

(Printed name and title)

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1. GENERAL

1.1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2. SUMMARY

- A. This section applies to all contractors.
- B. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Maintenance manuals for the care and maintenance of products, materials, and finishes, systems and equipment.
- C. Related Sections include the following:
 - 1. Division 1 Section "Summary of Single Contract" for operation and maintenance manuals covering the Work.
 - 2. Division 1 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
 - 3. Division 1 Section "Closeout Procedures" for submitting operation and maintenance manuals.
 - 4. Division 1 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
 - 5. Divisions 2 through 34 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.3. DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4. SUBMITTALS

- A. Submittal: Submit 3 copies of each manual in final form at least 15 days before final inspection. Architect will return all copies with comments within 15 days after final inspection or if no comments forward the manuals to the owner.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Architect's comments.

SECTION 017823 - OPERATION AND MAINTENANCE DATA

1.5. COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2. PRODUCTS

2.1. OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Organization: Include a section in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2. MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Contractor.
 - 6. Name and address of Architect.

SECTION 017823 - OPERATION AND MAINTENANCE DATA

7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
 1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
 4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
 5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3. EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

SECTION 017823 - OPERATION AND MAINTENANCE DATA

1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4. OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
1. System, subsystem, and equipment descriptions.
 2. Performance and design criteria if Contractor is delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.

SECTION 017823 - OPERATION AND MAINTENANCE DATA

2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5. PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds.
1. Include procedures to follow and required notifications for warranty claims.

2.6. SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard printed maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training videotape, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 - 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 - 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 3. EXECUTION

3.1. MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
 - 2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."
- F. Comply with Division 1 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1. GENERAL

1.1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2. SUMMARY

- A. This section applies to all contractors.
- B. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Product Data.
- C. Related Sections include the following:
 - 1. Division 1 Section "Summary of Single Contract" for Project Record Documents covering the Work.
 - 2. Division 1 Section "Closeout Procedures" for general closeout procedures.
 - 3. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 4. Divisions 2 through 34 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3. SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up Record Prints and one CD of scan record prints.
- B. Record Product Data: Submit three copies of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2. PRODUCTS

2.1. RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.

SECTION 017839 - PROJECT RECORD DOCUMENTS

- b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Locations of concealed internal utilities.
 - i. Changes made by Change Order or Construction Work Change Directive.
 - j. Changes made following Architect's written orders.
 - k. Details not on the original Contract Drawings.
 - l. Field records for variable and concealed conditions.
 - m. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected marked up record drawings:
- C. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.
 2. Scan Record Prints and submit scanned documents as a PDF file on CD/DVD.

2.2. RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

SECTION 017839 - PROJECT RECORD DOCUMENTS

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

2.3. MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3. EXECUTION

3.1. RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss.

END OF SECTION

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1. GENERAL

1.1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and other Division 1 Specification Sections, apply to this Section.

1.2. SUMMARY

- A. This section applies to all contractors.
- B. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
 - 3. Demonstration and training videos.
- C. Related Sections include the following:
 - 1. Divisions 2 through 34 Sections for specific requirements for demonstration and training for products in those Sections.

1.3. SUBMITTALS

- A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. At completion of training, submit one complete training manual for Owner's use.
- B. Qualification Data: For facilitator, instructor, photographer.
- C. Attendance Record: For each training module, submit list of participants and length of instruction time.
- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.
- E. Demonstration and Training Videos: Submit two copies within seven days of end of each training module.
 - 1. Identification: On each copy, provide an applied label with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date video was recorded.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

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1.4. QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Photographer Qualifications: A professional photographer who is experienced photographing construction projects.

1.5. COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2. PRODUCTS

2.1. INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:
 - 1. Communication systems, including network infrastructure and surveillance equipment.
 - 2. Barrier gate for new bus loop.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:

SECTION 017900 - DEMONSTRATION AND TRAINING

- a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 3. EXECUTION

3.1. PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.2. INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner, through Architect, with at least seven days' advance notice.
- D. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

3.3. DEMONSTRATION AND TRAINING VIDEO'S

- A. General: Engage a qualified commercial photographer to record demonstration and training videotapes. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Video Image Format: Provide high-quality CD/DVD recording.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and training. Display continuous running time.

END OF SECTION

TECHNICAL SPECIFICATION INDEX

PLAINEDGE UNION FREE SCHOOL DISTRICT

**LIBRARY MEDIA CENTER RENOVATION AT
JOHN H. WEST ELEMENTARY SCHOOL, CHARLES E. SCHWARTING ELEMENTARY SCHOOL,
EASTPLAIN ELEMENTARY SCHOOL, PLAINEDGE MIDDLE SCHOOL**

<u>SECTION NO</u>	<u>TITLE</u>
<u>ARCHITECTURAL</u>	
02 08 00	ASBESTOS ABATEMENT
02 08 30	LEAD ABATEMENT
02 08 40	ASBESTOS DESIGNER LICENSE
02 41 19	SELECTIVE STRUCTURE DEMOLITION
03 30 00	CAST-IN-PLACE CONCRETE
05 41 00	METAL STUD FRAMING
06 10 00	ROUGH CARPENTRY
07 27 00	FIRE STOPPING
070 90 00	JOINT SEALANTS
08 11 00	STEEL DOOR FRAMES
08 21 10	FLUSH WOOD DOORS
08 71 00	DOOR HARDWARE
08 80 00	GLAZING
09 22 26	METAL SUSPENSION SYSTEMS
09 26 00	GYPSUM BOARD ASSEMBLIES
09 51 00	ACOUSTICAL CEILINGS
09 65 13	RESILIENT BASE AND ACCESSORIES
09 65 19	RESILIENT LVT TILE FLOORING
09 68 13	TILE CARPETING
09 83 00	ACOUSTICAL FINISHES
09 91 23	INTERIOR PAINTING
10 44 10	PLASTIC SIGNAGES
12 24 00	MOTORIZED SHADES
12 49 30	CLUTCH OPERATED MANUAL WINDOW SHADES
16 05 00	BASIC ELECTRICAL MATERIALS AND METHODS
22 05 00	GENERAL REQUIREMENTS FOR PLUMBING
23 37 00	AIR OUTLETS
26 51 00	INTERIOR LIGHTING

SECTION 020800 – ASBESTOS ABATEMENT

PART 1

1.0 GENERAL

Remove, dispose and repair of the following asbestos containing, and/or asbestos contaminated materials as identified in the Scope of Work section of this specification, general specifications and drawings for this project, as applicable.

1.1 SCOPE OF WORK

A. Description

The “Scope of Work” covered by these specifications involves the removal, disposal and or repair of asbestos containing, and/or asbestos contaminated materials, as follows:

- A.1 Remove and dispose of the following asbestos containing, and/or asbestos contaminated materials, **see attached Asbestos, Lead & PCB Inspection Reports for locations**. These asbestos specifications are to be utilized with all other specifications and drawings associated with the project.

All asbestos containing material, and asbestos contaminated material abatement work shall be performed in strict accordance with the applicable provisions of New York State Department of Labor (NYS DOL) Industrial Code Rule 56 (12 NYCRR Part 56), United States Environmental Protection Agency (USEPA) AHERA (40 CFR Part 763), United States Occupational Safety & Health Administration (OSHA) and all other applicable federal, state and local laws, rules and regulations having jurisdiction over the work being performed, and shall include all aspects of worker safety & protection.

All other materials and surfaces located within and around the regulated abatement work area that are not subject for removal shall be pre-cleaned and protected during the abatement project.

The abatement work must be performed by a New York State Department of Labor (NYS DOL) licensed asbestos abatement contractor using only appropriately NYS DOL certified persons.

The asbestos contractor is responsible for coordinating his work with the building owner and other contractors on site, as necessary, so that the building will be protected against any damage (i.e. security, weather, etc.) and all work is completed in a timely fashion as applicable.

B. Special Variances

SECTION 020800 – ASBESTOS ABATEMENT

If the Contractor wishes to use any other variances from NYS ICR 56 (applicable or otherwise) it must first be approved by the Owner or Owner's Agent. If the use of such variance is approved and requires additional air monitoring other than what is noted in NYS ICR 56, then the Contractor shall be responsible for reimbursement of extra air monitoring costs to the Owner. The Contractor shall also be responsible for supplying the air monitoring firm with additional materials and equipment required to satisfy the variance requirements.

If the contractor plans or attempts to apply for a variance from the NYS DOL and it is not approved, or is not approved in a timely fashion, the contractor is still required to complete the scope of work, and complete the work within the stated schedule, regardless with or without the variance at no additional cost to the District.

C. Personnel

The work specified shall include the pre-cleaning, preparation, removal and disposal of asbestos containing materials (ACM) and asbestos contaminated materials and shall be carried out by persons trained, qualified and certified in the techniques of abatement and subsequent cleaning, testing, transportation and disposal in compliance with all federal, state and local regulations.

D. Restoration

The Contractor is responsible for the cleaning and removal of all debris located in the work area and surrounding areas after the abatement has been completed. Any damages caused during the performance of abatement activities shall be repaired by the Contractor (ex. paint peeled off by barrier tape, nail holes, water damage, broken glass) at no additional expense to the building Owner.

The Contractor is responsible for restoring abatement surfaces to conditions acceptable to the building Owner, and Owner's representative. This shall include, but is not limited to lingering odors, or out gassing, from chemical methods of abatement, damage to substrates (ex. flooring, roof decking, etc.) caused by abatement techniques, and any other surface or subsurface damage caused by the abatement technique.

If any method of abatement results in any lingering odors, or other unexpected conditions the Contractor will be required to remediate such to pre-abatement conditions. The determination of the pre-abatement conditions will be made by the Owner unless otherwise documented by all parties prior to abatement activities being performed.

SECTION 020800 – ASBESTOS ABATEMENT

1.3 PERFORMANCE OF WORK

The Contractor is required to perform the scope of work in the following sequence and in accordance to the special requirements. Whenever there is a conflict between this schedule and requirements of any applicable regulations (ie. NYSDOL ICR 56, AHERA, OSHA, etc.) the most stringent shall apply.

A. Preparation

The Owner shall be responsible to remove all moveable objects from the work area prior to the start of abatement activities.

The Contractor shall then proceed as follows:

The Contractor will inspect the work area, and all areas utilized throughout the project for any unsafe situations or dangerous conditions prior to the beginning of the project. The Contractor will then be responsible to take appropriate actions and steps to effectively provide a safe environment for his workers.

The Contractor shall then inspect the work area and all other areas that will be utilized throughout the abatement project for any property and/or objects damage that may exist prior to the beginning of the work. This information must be submitted to the Owner or Owner's Agent prior to the start of any work. The Contractor will be responsible for obtaining written confirmation of the Owner or Owner's Agent receipt of the submittal. The Contractor will be responsible for the repair and/or replacement any damaged materials and/or objects inside the work area, or in the areas utilized by the Contractor during the abatement project, that were not noted and acknowledged by the Owner or Owner's Agent.

The Contractor shall cordon off the work area, and all other areas utilized during the abatement, with caution tape and warning signs. The Contractor will be responsible to ensure that the cordoned off area is maintained, and cleaned, during the length of the abatement project.

The Contractor shall then construct decontamination units as required by these specifications and all applicable regulations. The decontamination units shall be constructed with a plywood, or equal, covering (exterior).

The Contractor shall then construct isolation barriers, seal critical barriers with 2 layers of 6 mil plastic, and plasticize the area with an additional 2 layers of 6 mil plastic sheeting as required in accordance with NYS ICR 56. As required, then install negative air machines and test as described in these specifications and in Industrial Code Rule 56.

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The Contractor shall then decommission all other electrical power to the work area. The source of the electricity to the work area shall be "marked and tagged" to avoid any unintentional initiation of electrical power to the work area during the abatement activities.

All areas in which no abatement is to take place will be sealed shut or otherwise isolated from the work area. All fixtures in the work area shall be either: (a) removed, decontaminated (HEPA vacuumed/wet wiped) and stored in plastic sheeting outside the work area, or: (b) left in place, decontaminated and plasticized individually.

Removal of asbestos shall not commence until the decontamination units and work areas have been inspected and approved by the Owner or Owner's Agent.

B. Abatement

Removal of asbestos and asbestos containing materials shall be performed in accordance with the applicable provisions of NYS DOL Industrial Code Rule 56 (12 NYCRR Part 56), USEPA AHERA (40 CFR Part 763), OSHA and all other applicable federal, state and local laws, rules and regulations having jurisdiction over this project and includes all aspects of worker safety & protection. All other materials located in the abatement area that are not subject for removal shall be pre-cleaned and protected during the abatement in accordance with these specifications and NYS ICR 56.

After the work area has been rendered free of all visible residues, the Contractor shall request a visual inspection of from the Owner or Owner's Agent. It is then the Owner or Owner's Agent discretion whether the work area has been rendered free of all asbestos containing materials. The Owner or Owner's Agent reserves the right to have bulk sampling performed in the work area to ensure that sufficient removal and cleanings have been performed.

C. Clearance

After the removal of asbestos, the cleanup of the area shall be carried out as detailed in Industrial Code Rule 56. This shall include the applicable waiting periods, unless a variance allowing a shorter waiting time is applied for, received and approved by the NYS DOL and Owner. Final clearance of the area shall be established by analysis of air samples. Aggressive final air sampling clearance shall be performed by both Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) methods of analysis in accordance with NYS ICR 56 and AHERA. The abatement project will be considered complete when the TEM method of analysis satisfies the requirements of 40 CFR Part 763. The owner reserves the right for the abatement project to be considered complete when the TEM

SECTION 020800 – ASBESTOS ABATEMENT

method of analysis reveals no detectable concentrations of asbestos fibers for all abatement projects (small scale short duration, minor, small and/or large). The contractor shall be notified of such prior to the commencement of the project.

D. Special Requirements

The Contractor shall become familiar with special conditions at the site which must be considered during the asbestos abatement.

These conditions include but are not limited to:

The Contractor is responsible for performing a pre-inspection of each work area scheduled to be impacted by the proposed work to confirm the presence, and or absence of asbestos containing materials and to field verify their locations and quantities. Any suspect asbestos containing materials must be identified to the owner or owner's agents for sampling and confirmation. After the sampling and confirmation of the asbestos containing materials the contractor will be responsible for the removal of all asbestos containing materials that are expected to be impacted by the proposed work.

Contractor shall be responsible for providing emergency power and lighting to the work area in case of electrical failure, as needed; all power to work areas shall be brought in from outside the work area through a ground fault circuit interrupter at the source. The Owner reserves the right to have this electrical system approved by a state licensed electrician.

Contractor must provide a qualified worker to be stationed at the decontamination unit entrance to control entry into the work area. This worker must be present at the decontamination unit entrance at all time while the abatement is in progress.

The Contractor shall record results of smoke tests of all critical and isolation barriers, at the beginning and end of each shift. Contractor shall designate an individual just for this purpose (if applicable).

Once the abatement project has started, the Contractor will be responsible for notifying the Owner or Owner's Agent of the date and time of the next work day (schedule must satisfy requirements indicated elsewhere in these specifications or bidding documents) at a minimum 24 hours in advanced. If the Contractor does not notify the Owner of any cancellations, tardiness and/or postponements, the Contractor will be responsible for the reimbursement to the Owner of any costs incurred (ex. third party monitor, custodial services, etc...).

The means and methods of the asbestos removal shall be determined by the

SECTION 020800 – ASBESTOS ABATEMENT

Contractor, however must be submitted in writing and approved by the Owner or Owner's Agent.

There must be a daily pre-construction meeting between the Contractor and the Owner or Owner's Agent to schedule the detail of work and work areas for each shift in advance.

A first aid kit must be provided by the Contractor on the premises, sized to correspond to the number of workers present.

GPAC licensing shall be obtained (if required).

The Contractor is responsible for enforcing personal air monitoring of the abatement workers as required. The Contractor is also responsible for ensuring that only certified workers are located within the work area and that they are wearing required respiratory and protective clothing and gear.

The Contractor must supply the Owner with a waste manifest for all asbestos or asbestos contaminated waste removed from the site. All asbestos and/or asbestos contaminated materials (both friable and non-friable) must be disposed of as asbestos waste. All waste transfer shall be performed in accordance with all federal, state and local regulations including but not limited to NYSDEC Title 6 Part 364.

It shall be the Contractor's sole responsibility to implement and enforce all relevant OSHA regulations having jurisdiction of the abatement work, and restoration activities.

The Contractor may not store any asbestos related waste materials, whether asbestos waste or construction waste, or construction tools or materials in the work area. The work area must be cleaned and cleared at the end of each shift.

The Contractor is required to supply the Owner and Owner's Agents with required respiratory and protective clothing whenever the Owner and/or Owner's Agent desires to enter the work area.

All disposals of waste materials will be performed in accordance with all applicable federal, state and local laws, rules and regulations including but not limited to NYSDEC Title 6 Part 364. This includes the proper removal and disposal of all hazardous and regulated waste generated in conjunction with the abatement and any demolition activities. This includes but is not limited to hazardous waste generated from mastic removal; PCB light ballasts removals, etc...

It should be expected that the fire and security alarm systems, in the work area,

SECTION 020800 – ASBESTOS ABATEMENT

and surrounding areas, will be decommissioned during the abatement activities. The Contractor will be responsible for the security and fire watch of the work area and the storage of asbestos contaminated waste materials on site until its removal. This includes access into the building through NFU exhausts, exterior decontamination units and containerized asbestos waste. The Contractor shall be responsible for policing the entrances to the work areas during the entire abatement project.

The contractor will be responsible for the cross contamination of asbestos fibers or suspect asbestos debris to non-work areas or areas utilized during the abatement project. In the event a non-work area is suspect of having been contaminated the contractor is responsible for the proper cleaning and clearance of these areas. This includes, but is not limited to, debris falling in public areas, air plenums and other spaces such as between a roof deck and ceiling system. The contractor will be responsible for reimbursement to the owner for any additional costs incurred to the owner.

For Roof Abatement Projects:

In addition to the removal of asbestos containing, and/or asbestos contaminated roofing materials, the contractor is also responsible for the removal of any friable asbestos containing, and/or asbestos contaminated, thermal systems insulation (TSI) associated with the roof drains and any associated piping that may be impacted by the proposed work. The Contractor is responsible for performing a pre-inspection of each roof drain as well as any other asbestos TSI insulated piping associated with the roof drains scheduled to be removed, replaced, or otherwise altered prior to that work being performed to confirm the presence, and or absence of asbestos containing materials. Any suspect, or asbestos containing materials, must be identified by the contractor to the owner or owner's agent for confirmation. After sampling and confirmation of the asbestos containing materials the contractor will be responsible for the removal of all asbestos containing materials that are expected to be impacted by the proposed work (that includes any asbestos TSI insulated piping around the roof drains).

For Minor Abatement Projects:

Minor project removal of asbestos containing, and/or asbestos contaminated TSI, in addition to glove bag techniques, the contractor must utilize tent or "mini-containment removal techniques as defined in NYS ICR 56. Due to the quantity of material removed these projects are classified as minor projects, under NYS ICR 56 and "small scale short duration projects" under AHERA.

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Clearance air sampling will be performed to ensure no cross contamination of asbestos fibers has occurred and to protect the health & safety of the workers and building occupants.

For exterior abatement work:

The Contractor will be required to supply to their workers, the Owner, and Owner's representative solid colored (non-white) TYVEK, or other equal protective covering suits. White protective suits will not be acceptable for exterior abatement work.

1.4 APPLICABLE STANDARDS AND GUIDELINES

A. General requirements

All work under this contract shall be done in strict accordance with all applicable federal, state and local regulations, standards and codes governing asbestos abatement and any other trade work done in conjunction with the abatement. These include but are not limited to

EPA TITLE 40 CFR PART 763, OSHA TITLE 29 CFR PART 1910 SECTION 1001 & 134, OSHA TITLE 29 CFR PART 1926.1101, EPA TITLE 40 CFR PART 61, NY STATE DEC TITLE 6 PART 364 & NY STATE DOH TITLE 10 PART 73.

The most recent edition of any relevant regulation, standard, document or codes shall be in effect. Where conflict among the requirements or with these specifications exists the most stringent requirements shall be utilized.

Copies of all standards, regulations, codes and other applicable documents, including this specification shall be available at the worksite in the clean change area of the worker decontamination system. These documents will be supplied by the Contractor.

1.5 SUBMITTAL AND NOTICES

A. The asbestos abatement contractor shall submit project notification to the NYS DOL and US EPA as applicable. The contractor shall provide the owner with proof of submittal. The contractor shall also prepare and perform proper building notifications as required by regulatory agencies.

B. At the Owner or Owner's Agent's request the Contractor shall provide the following:

Submit all documentation satisfactory to the Owner or Owner's Agent that the

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Contractor's employees, including foremen, supervisors and any other company personnel or Agents who may be exposed to airborne asbestos fibers or who may be responsible for any aspects of abatement activities, have received adequate. This will include a copy of their New York State Labor Department Asbestos Certificate for each worker who is expected to be performing on the project including the Contractor's company certificate. If a new worker is added to the project after the start of the abatement a copy of this worker's certificate must be made available prior to the worker entering the work area.

Submit documentation from a physician that all employees or Agents who may be exposed to airborne asbestos more than background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that personnel have received medical monitoring as required in OSHA 29 CFR Part 1910. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g., high temperature, humidity, chemical contaminants) that may impact on the employees' ability to perform work activities.

Submit documentation of respirator fit testing for all Contractor employees and Agents who must enter the work area. This fit testing shall be in accordance with qualitative procedures as detailed in the OSHA Safety & Health Standards 29 CFR.

Name and address of the proposed monitoring testing laboratory and a written description of the proposed method of measuring air samples.

C. During Abatement Activities:

Prepare daily job progress reports detailing abatement activities. Include review of progress major problems and actions taken, injury reports, equipment breakdown, etc.

Prepare copies of all transport manifests, trip tickets and disposal receipts for all asbestos waste materials removed from the work area during the abatement process.

Prepare daily copies of worksite entry logbooks with information on worker and visitor access.

Prepare daily logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls.

Prepare results of air sampling data collected during the abatement for OSHA

SECTION 020800 – ASBESTOS ABATEMENT

compliance air monitoring.

Post in the clean room area of the worker decontamination enclosure a list containing the names, addresses, and telephone numbers of the Contractor, the Owner or Owner's Agent, the General Superintendent, the Air Sampling Professionals, the testing laboratory, emergency responders and any other personnel who may be required to assist during abatement activities.

Prepare and have available upon request, results of any asbestos sampling & analysis data that is collected during the abatement.

1.6 SITE SECURITY

The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractor's employees, Owner or Owner's Agent employees and representatives, state and local inspectors and any other designated individuals. A list of authorized personnel shall be established prior to job start and be posted in the clean room area.

Entry into the work area by unauthorized individuals shall be reported immediately to the Building Owner or Owner's Agent by the Contractor.

A log book shall be maintained in the clean-room area of the decontamination facility. Anyone who enters the work area must record name, affiliation, time in, and time out for each entry.

Contractor shall have control of site security during abatement operations whenever possible, to protect work efforts and equipment.

1.7 EMERGENCY PLANNING

Emergency planning shall be developed prior to abatement initiation by the Contractor.

Emergency procedures shall be in written form and prominently posted in the clean room area and equipment room of the worker decontamination area. Prior to entering the work area, everyone must read and sign these procedures to acknowledge receipt and understanding of work site layout, the location of emergency exits and emergency procedures. Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, confined spaces and heat related injury. Written procedures shall be developed by the Contractor and Contractor's employees shall be trained in emergency procedures. Upon completion of training, the employee will sign a document indicating full understanding of the procedures.

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Employees shall be trained in evacuation procedures in the event of workplace emergencies.

For life threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove him/her from the workplace and secure proper medical treatment.

Telephone numbers of all emergency response personnel shall be prominently posted in the clean room area and equipment room, along with the location of the nearest telephone.

1.8 CONTRACT DOCUMENTS

All work of this section shall comply with the requirements of the Conditions of the Contract (General, Supplementary and Special), with all sections of Division 1 - General Requirements, with this Section, with the Drawings, and with other Contract Documents as provided in the Bid Documents.

All insurance shall be obtained from companies licensed to do business in the State of New York as "admitted carriers", and must be acceptable to the Owner with a "Best" rating no lower than "A". It is the Contractor's responsibility to submit and keep current two (2) copies of certificates of insurance with the Owner or Owner's Agent. Work may not start until all insurance certificates are on file.

No work may continue and no payments will be made after the expiration date noted on the latest insurance certificate on file with the Owner or Owner's Agent.

The Owner or Owner's Agent must be notified in writing of any changes in the insurance coverage within three (3) days of the Contractor's knowledge of such change.

All insurance policies shall provide that the insurance will not be canceled or changed without thirty (30) days written notice of such cancellation or change being mailed to and received by the Owner's Representative.

The Contractor shall assist and cooperate with the Owner's Representative and its insurance carrier(s) about all claims relating to the project. The Contractor will hold harmless the Owner in any actions.

The Contractor agrees to hold the school district and their representatives harmless from all fines, levies, or penalties including the cost of reasonable attorney's fees issued by any jurisdictional authorities because of any actions or work procedures used by the Contractor or his sub-Contractors or any persons employed directly or indirectly by the Contractor.

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The Contractor shall defend, indemnify and hold harmless the school district their officers directors, employees, Agents, servants, from and against all losses (including, but not limited to, property damage and bodily injury or death resulting there from), costs, damages, claims, expenses, including attorney's fees and expenses of litigation, judgments, liens and encumbrances, arising out of or in any way connected with the Services of the Contractor or that of any sub-Contractor and whenever made or incurred, including any and all liability imposed by law, contract, custom upon the school district their officers, directors, employees, Agents, and servants or any or all of them, whether or not it be claimed or proven that there was negligence or breach of statutory duty or both upon the part of the school district their officers, directors, employees, Agents, servants except where indemnity would be precluded by New York State General Obligations Law, Section 322.1, or by other applicable law. In accordance with the above, the school district shall have the right to demand that the Contractor undertake to defend both the school district its officers, directors, employees, Agents, servants against all lawsuits for which the Contractor has the duty to indemnify the Owner. If the Contractor indemnifies the Owner for any damages, losses, costs, and expenses, which result from the negligence of a third party, the school district will assign to the Contractor any corresponding cause of action that it may have against such third parties.

The Owner will not purchase property insurance. All insurance is to be carried by the Contractor with the school district as additional insured.

SECTION 020800 – ASBESTOS ABATEMENT

PART 2 - MATERIALS

2.1 MATERIALS

Whenever a conflict exists between one of the following statements and that from any other applicable regulation or source the most stringent shall apply. The final interpretation must be approved by the Owner or Owner's Agent.

A. General

Deliver all materials in the original packages, containers or bundles bearing the name of the manufacturer and the brand name (where applicable).

Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover enough to prevent damage or contamination. Replacement materials shall be stored outside of the work area until abatement is completed. No asbestos waste may be stored in the work area overnight. All waste must be removed at the end of each shift.

Areas utilized outside the work area used for storage must be maintained in a neat and safe manner.

Disposal bags shall be of 6 mil polyethylene, pre- printed with labels as required by EPA regulation 40 CFR or OSHA requirement 29 CFR Part 1910 and Department of Transportation regulations.

B. Removal

Surfactant (wetting Agent) shall be a 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester, or equivalent, mixed in a proportion of 1 fluid ounce to 5 gallons of water or as specified by manufacturer. (An equivalent surfactant shall be understood to mean a material with a surface tension of 29 dynes/cm as tested in its properly mixed concentration, using ASTM methods. Where work area temperature may cause freezing of the amended water solution, the addition of ethylene glycol in amounts sufficient to prevent freezing is permitted.

Glove bags shall be a minimum 6 mils. thick clear poly bags with permanently attached arms with latex gloves specially designed for removing asbestos-containing material from pipes.

Encapsulating Agent is not to be applied to surfaces from which asbestos containing material has been stripped.

2.2 EQUIPMENT

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A. General

A sufficient number of negative pressure ventilation units equipped with HEPA filtration and operated in accordance with ANSI 29.2-70 (local exhaust ventilation requirements) and EPA guidance document EPA 560/5-85-024 Guidance for Controlling Friable Asbestos-Containing Materials in Buildings Appendix J: Recommended specifications and operating procedures for the use of negative pressure systems for asbestos abatement shall be utilized so as to provide one workplace air change every 15 minutes.

Full body disposable protective clothing, including head, body and foot coverings consisting of material impenetrable by asbestos fibers (Tyvek R or equivalent) shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing.

Additional safety equipment (e.g., hard hats meeting the requirements of ANSI Standard Z89.1- 1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety boots meeting the requirements of ANSI Standard Z41.1-1967, disposable PVC gloves necessary, shall be provided to all workers and authorized visitors.

B. Removal

A sufficient supply of scaffolds, ladders, lifts and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

Sprayers with pumps capable of providing 500 pounds per square inch (psi) at the nozzle tip at a flow rate of 2 gallons per minute for spraying amended water.

Rubber dustpans and rubber squeegees shall be provided for cleanup.

Brushes utilized for removing loose asbestos containing material shall have nylon or fiber bristles, not metal.

A sufficient supply of HEPA filtered vacuum systems shall be available during cleanup.

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PART 3 - METHOD

Whenever a conflict exists between one of the following statements and that from any other applicable regulation or source the most stringent shall apply. The final interpretation must be approved by the Owner or Owner's Agent.

3.1 PREPARATION

A. Work Areas

The Contractor shall post caution signs meeting the specifications of OSHA 29 CFR 1910 at any location and approaches to a location where airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional signs may need to be posted following construction of workplace enclosure barriers.

The Contractor shall ensure that HVAC Systems are shut down and seal all intakes and exhaust vents in the work area with duct tape and 6-mil polyethylene. Also seal any seams in system components that pass through the work area. Remove all HVAC system filters and place in labeled 6-mil polyethylene bags for staging and eventual disposal as asbestos contaminated waste.

The Contractor shall pre-clean contaminated moveable objects within the work area using a HEPA filtered Vacuum and/or wet cleaning methods as appropriate. After cleaning, these objects shall be removed from the work area.

The Contractor shall pre-clean all fixed objects in the work area.

The Contractor shall pre-clean all surfaces in the work area using HEPA filtered vacuums and/or wet cleaning methods as appropriate. Do not use any methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not disturb asbestos containing materials during the pre-cleaning phase.

The Contractor shall seal off all windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, skylights and any other openings between the work area and uncontaminated areas outside of the work area (including the outside of the building, tunnels and crawl spaces) with 6-mil polyethylene sheeting and duct tape.

Plastic shall be sized to minimize seams. If the floor area necessitates seams, those on successive layers of sheeting shall be staggered to reduce the potential for

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water to penetrate to the flooring material. A distance of at least 6 feet between seams is sufficient. Do not locate any seams at wall/floor joints.

Floor sheeting, if utilized shall extend at least 16 inches up the sidewalls of the work area, and fasten securely to the wall.

Sheeting shall be installed in a fashion so as to prevent slippage between successive layers of material. (Vinyl sheeting may be used for improved traction on floors).

The Contractor shall cover walls in the work area with (2) layers of polyethylene sheeting.

Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least 6 feet.

Wall sheeting shall overlap floor sheeting if used by at least 12 inches beyond the wall/floor joint to provide a better seal against water damage and for negative pressure.

Wall sheeting shall be secured adequately to prevent it from falling away from the walls. This will require additional support/attachment when negative pressure systems are utilized.

B. Worker decontamination enclosure systems

Worker decontamination enclosure systems shall be provided at all locations where workers will enter or exit the work area. The worker decontamination enclosure system shall be constructed as required by New York State Industrial Code Rule. In addition the exterior shell of the decontamination unit shall be constructed of plywood, or equal, and shall be equipped with a lockable door, with a key provided to the Owner's representative.

C. Waste Container Pass-out

Asbestos contaminated waste that has been containerized shall be transported out of the work area through the waste container pass-out airlock in accordance with ICR 56.

D. Negative Pressure Systems

Negative pressure ventilation equipment shall operate continuously, 24 hours a day, from the establishment of isolation barriers through successful clearance air

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monitoring. If such equipment shuts off, adjacent areas shall be monitored for asbestos fibers.

A static negative air pressure of 0.02 inches (minimum) water column shall be maintained at all times in the work place during abatement to ensure that contaminated air in the work area does not filter back to uncontaminated areas.

E. Emergency Exits

Emergency exits shall be established and clearly marked with duct tape arrows or other effective designation to permit easy location from anywhere within the work area. They shall be secured to prevent access from uncontaminated areas and still permit emergency exiting. These exits shall be properly sealed with polyethylene sheeting which can be cut to permit egress if needed. These exits may be the worker decontamination enclosure, the waste pass-out airlock and/or other alternative exits satisfactory to fire officials.

3.2 PROCEDURES

A. Commencement of Work

Commencement of work shall not occur until:

Enclosure systems have been constructed and tested.

Negative pressure ventilation systems are functioning adequately and are tested.

All equipment for abatement, clean-up and disposal are on hand.

All worker training and certification is completed, as required.

3.3 PERSONNEL PROTECTION REQUIREMENTS

A. Training

Prior to commencement of abatement activities all personnel who will be required to enter the work area or handle containerized asbestos containing materials must have received adequate training and certification which includes but is not limited to NYSDOH Title 10 Part 73. Special on-site training on equipment and procedures unique to this job site shall be performed as required. Training in emergency response and evacuation procedures shall be provided.

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B. Respiratory Protection

Respiratory protection shall be provided to workers in accordance with the submitted written respiratory protection program which shall meet the requirements of the most recent regulations.

C. Testing

Workers must perform positive and negative air pressure fit tests each time a respirator is put on, whenever the respirator design so permits. Powered air-purifying respirators shall be tested for adequate flow as specified by the manufacturer. All other testing of respiratory protection devices shall be performed in strict accordance with the most recent regulations having jurisdiction over respiratory protection.

D. Protective Clothing

Disposable clothing including head, foot and full body protection shall be provided in sufficient quantities and adequate sizes for all workers and authorized visitors.

E. Personal Monitoring

Sampling shall be conducted in accordance with CFR 1926.58 Appendix A.

3.4 REMOVAL PROCEDURES

Clean and isolate the work area.

Wet all asbestos containing material with an amended water solution using equipment capable of providing a fine spray mist, in order to reduce airborne fiber concentrations when the material is disturbed.

Saturate the material to the substrate; however, do not allow excessive water to accumulate in the work area. Keep all removed material wet enough to prevent fiber release until it can be containerized for disposal. Maintain a high humidity in the work area by misting or spraying to assist in fiber settling and reduce airborne concentrations. Wetting procedures are not equally effective on all types of asbestos containing materials but, shall none-the-less be used in all cases.

Saturated asbestos containing material shall be removed in manageable sections. Removed material should be containerized before moving to a new

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location for continuance of work. Surrounding areas shall be periodically sprayed and maintained in a wet condition until visible material is cleaned up.

Material removed from building structures or components shall not be dropped or thrown to the floor or ground. Material should be removed as intact sections or components whenever possible and carefully lowered to the floor. If this cannot be done for materials greater than 50 feet above the floor, a dust-tight chute shall be constructed to transport the material to containers on the floor or the material may be containerized on the floor or the material may be containerized at elevated levels (e.g. on scaffolds) and carefully lowered to the ground by mechanical means. For materials between 15 and 50 feet above the ground they may be containerized at elevated levels or dropped onto inclined chutes or scaffolding for subsequent collection and containerization.

Containers (6-mil polyethylene bags or drums) shall be sealed when full. (Wet material can be exceedingly heavy. Double bagging of waste material is usually necessary. A determination of need for single or double bags must be made early in the abatement process and agreed to by the Owner or Owner's Agent.) Bags shall not be overfilled. They should be securely sealed to prevent accidental opening and leakage by tying tops of bags in an overhand knot or taping in goose neck fashion. Do not seal bags with wire or cord. (Bags may be placed in drums for staging and transportation to the landfill. Bags shall be decontaminated on exterior surfaces by wet cleaning and HEPA vacuuming before being placed in clean drums and sealed with locking ring tops.)

Asbestos containing waste with sharp-edged components (e.g. nails, screws, metal lath, tin sheeting) will tear the polyethylene bags and sheeting and shall be placed into fiber boxes prior to bagging or into dumpster for disposal.

After completion of all stripping work, surfaces from which asbestos containing materials have been removed shall be wet brushed and sponged or cleaned by some equivalent method to remove all visible residues. Clean up shall proceed.

3.5 CLEAN UP PROCEDURES

Remove and containerize all visible accumulation of asbestos containing material and asbestos contaminating debris utilizing rubber dust pans and rubber squeegees to move material around. Do not use metal shovels to pick up or move accumulated waste. Special care shall be taken to minimize damage to floor sheeting.

Wet clean all surfaces in the work area (including walls, floor, and ceilings) using rags, mops and sponges as appropriate. (Note: Some HEPA vacuums might not be wet-dry vacuums. To pick up excess water and gross wet debris, a wet-dry

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shop vacuum may be used. This will be contaminated and require cleaning prior to removal from the work area).

Remove the cleaned outer layer of plastic sheeting from walls and floors. Windows, doors, HVAC system vents and all other openings shall remain sealed. The negative pressure ventilation units shall remain in continuous operation. Decontamination enclosure systems shall remain in place and be utilized.

After cleaning the work area, wait at least 12 hours to allow fibers to settle and HEPA vacuum and wet clean all objects and surfaces in the work area again unless an applicable variance allows for alternative procedures.

Remove all containerized waste from the work area and waste container pass-out airlock.

Decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.

Inspect the work area for visible residue. If any accumulation of residue is observed, it will be assumed to be asbestos and the 12 hour settling period/cleaning cycle repeated.

The work area shall be cleaned until it is in compliance with Federal, State and Local requirements and no visible residue is observed prior to final air sampling. Additional cleaning cycles shall be provided, as necessary until these criteria have been met.

Following the satisfactory completion of clearance air monitoring, remaining barriers may be removed and properly disposed of. A final visual inspection shall insure that no contamination remains in the work area. Unsatisfactory conditions may require additional cleaning and air monitoring.

3.6 CLEARANCE AIR MONITORING

After the removal of asbestos the clean up of the area shall be carried out as detailed in Industrial Code Rule 56. This shall include the applicable twelve hour waiting periods, unless a variance allowing a shorter waiting time is applied for, received and approved by the Owner.

Final clearance of the area shall be established by analysis of air samples. Aggressive final air sampling clearance shall be performed by both Phase Contrast Microscopy (PCM) and Transmission Electron Microscopy (TEM) methods of analysis in accordance with NYS ICR 56 and AHERA. The abatement project will

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be considered complete when no detectable concentrations of asbestos fibers are detected by TEM Methodology.

3.7 DISPOSAL PROCEDURES

As the work progresses, to prevent exceeding available storage capacity on site, sealed and labeled containers of asbestos containing waste shall be removed and transported to the prearranged disposal location as necessary.

All asbestos and/or asbestos contaminated waste generated both friable and/or non-friable materials must be disposed of as asbestos waste.

3.8 TRANSPORTATION PROCEDURES

Transportation and disposal of asbestos or asbestos contaminated materials must be performed in accordance with all applicable federal, state and local regulations. All dump receipts, trip tickets, transportation manifests or other documentation of disposal shall be delivered to the Building Owner or Owner's Agent for his records.

3.9 RE-ESTABLISHMENT OF WORK AREA AND SYSTEMS

Re-establishment of the work area shall only occur following the completion of clean-up procedures and after clearance air monitoring has been performed and documented to the satisfaction of the Building Owner or Owner's Agent.

Polyethylene barriers shall be removed from walls and floors at this time, maintaining decontamination enclosure systems and barriers over doors, windows, etc. as required.

3.10 TRAINING

Training shall be provided by the Contractor for all employees or Agents who may be required to disturb asbestos contaminated materials for abatement and auxiliary purposes and for all supervisory personnel who may be involved in planning, execution or inspection of abatement projects. Individuals shall be trained in accordance with but not limited to NYSDOH Title 10 Part 73.

Training shall provide, at a minimum, information on the following topics.
The health hazards of asbestos including the nature of various asbestos related diseases, routes of exposure, known dose-response relationships, the synergistic relationship between asbestos exposure and cigarette smoking, latency periods for disease and health basis for standards.

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The physical characteristics of asbestos including fiber size, aerodynamic properties, physical appearance and uses.

Employee personal protective equipment including the types and characteristic of respirators, field testing the face-piece to face seal (positive and negative pressure fitting tests), qualitative and quantitative fit testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit (e.g. facial hair), selection and use of disposable clothing, use and handling of launderable clothing, non-skid shoes, gloves, eye protection and hard hats.

Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.

Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.

Work practices for asbestos abatement including purpose, proper construction and maintenance of air-tight plastic barriers, job set-up of air locks, worker decontamination systems and waste transfer air locks, posting of warning signs, engineering controls, electrical and ventilation system lockout, proper working techniques, waste clean-up, storage and disposal procedures.

Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking, chewing and contact lenses in the work area.

Special safety hazards that may be encountered including electrical hazards, air contaminants (CO, wetting Agents, encapsulant, materials from Owner or Owner's Agent operation), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress and noise.

Workshops affording both supervisory personnel and abatement workers the opportunity to see (and experience) the construction of containment barriers and decontamination facilities.

Supervisory personnel shall, in addition, receive training on contract specifications, liability insurance and bonding, legal considerations related to abatement, establishing respiratory protection medical surveillance programs, EPA and OSHA record keeping requirements as requested by the Owner or Owner's Agent.

Training is to have occurred within 12 months prior to the initiation of abatement activities.

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Contractor must document training by providing the Owner or Owner's Agent with such documentation including date of training, training entity, duration of the training, course outline, and names and qualifications of trainers.

3.11 MEDICAL MONITORING

Medical Monitoring must be provided by the Contractor to any employee or Agent that may be exposed to asbestos in excess of background levels during any phase of the abatement project. (Due to the synergistic effects between smoking and asbestos exposure, it is highly recommended that only non-smokers be employed in positions which require them to enter asbestos contaminated atmospheres.

Medical monitoring shall include at a minimum:

A work/medical history to elicit symptomatology of respiratory disease.

A chest x-ray (posterior - anterior, 14 by 13 inches) evaluated by a Certified B-reader.

A pulmonary function test, including forced vital capacity (FVC) and forced expiratory volume at one second (FEV)₁, administered and interpreted by a Certified Pulmonary Specialist.

Employees shall be given an opportunity to be evaluated by a physician to determine their capability to work safely while breathing through the added resistance of a respirator. (Examining physicians shall be aware of the nature of respiratory protective devices and their contributions to breathing resistance. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work the employee will be required to perform, as well as special workplace conditions such as high temperatures, high humidity, and chemical contaminant exposure).

3.12 AIR SAMPLING TECHNICIAN

The Owner will be responsible for retaining the services of an independent third party air monitoring firm to perform and fulfill the air monitoring requirement in accordance with NYS ICR 56 and AHERA.

Air sampling must be performed throughout the project in accordance with NYS ICR 56. The persons performing the air sampling must be a NYS DOL certified air sampling technician working for a NYS DOL licensed air monitoring firm. The air sampling shall include, but is not limited to, background sampling, preparatory

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sampling, during abatement sampling and clearance sampling as required in NYS ICR 56 or applicable variances.

3.13 LABORATORY SERVICES

Laboratories utilized for analyzing air samples by NIOSH 7400 method shall be certified under the New York State Environmental Laboratory Approval Program (ELAP). Laboratories used for analyzing air samples by Transmission Electron Microscopy (TEM) shall be satisfactory participants in and be certified under the National Voluntary Laboratory Accreditation Program (NVLAP). Laboratories used for bulk material identification shall be satisfactory participants in the EPA quality assurance program for bulk asbestos analysis and certified by both the ELAP and NVLAP.

The Owner shall be responsible for retaining the services of an independent testing laboratory to perform and fulfill the air sampling analysis requirements in accordance with NYS ICR 56, OSHA and ELAP. The costs associated with the laboratory analysis services shall be included in the unit prices bid for the work described in these specifications. The testing laboratory must be approved by the Owner or Owner's Agent.

For PCM and TEM analysis the period of time permitted between the collection of air samples and the availability of verbal results shall be 24 hours or less.

3.14 DEFINITIONS

Abatement: Procedures to control fiber release from asbestos-containing materials. Includes removal, encapsulation, enclosure, repair, demolition and renovation activities.

Airlock: System for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways separated by a distance of at least three (3) feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

Air monitoring: The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure normally utilized for asbestos follows the NIOSH Standard Analytical Method for Asbestos in Air Method 7400. Electron microscopy methods may be utilized for detecting smaller fibers and specific fiber identification.

Air Sampling Professional: The professional contracted by the Building Owner or

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Owner's Agent or by the Contractor to review and/or conduct air monitoring and analysis schemes. Air sampling, review and evaluation of results should be performed by an individual certified the New York State Department of Labor and Department of Health in air sampling for asbestos.

Amended Water: Water to which a surfactant has been added.

ANSI: American National Standards Institute

Asbestos: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, actinolite, and tremolite.

Asbestos Containing Material (ACM): Material composed of asbestos of any type either alone or mixed with other fibrous or non-fibrous materials.

Asbestos Containing Waste Material: Asbestos containing material or asbestos contaminated objects requiring disposal.

Asbestos Project Monitor/Manager: An individual, other than an asbestos abatement Contractor or an employee or Agent thereof, designated as the Owners representative and responsible for overseeing the asbestos abatement project. The Project Monitor shall possess a valid project monitor certificate from the NYS DOL and shall have such certificate or copy thereof in his/her possession at all times while working on the project.

ASTM: American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103

Authorized visitor: The Building Owner or Owner's Agent (and any designated representative) and any representative of a regulatory or other agency having jurisdiction over the project.

Building Owner or Owner's Agent: The Owner or his authorized representative.

Certified Persons: Persons maintaining current certifications from the NYSDOL and DOH and any other government agency having jurisdiction over the project, for the specific task for which he/she is expected to perform (i.e. Supervisor, Asbestos Handler, Air Monitor, etc...).

Clean Room: An uncontaminated area or room which is part of the worker decontamination enclosure system with provisions for storage of worker's street clothes and clean protective equipment.

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Contractor: Asbestos abatement Contractor.

Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing three overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, and along opposite vertical sides of the doorway.

Decontamination Enclosure System: A series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of workers and equipment.

Demolition: The wrecking or taking out of any load- supporting structural member of a facility together with any related handling operations.

Encapsulant: A liquid material which can be applied to asbestos containing material which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

Encapsulation: The application of an encapsulant to asbestos containing materials to control the release of asbestos fibers into the air.

Enclosure: The construction of an air-tight, impermeable, permanent barrier around asbestos containing material to control the release of asbestos fibers into the air.

EPA: U.S Environmental Protection Agency, 401 M Street S.W., Washington, DC 20460.

EPA: Title 40 CFR Part 61

Equipment Room: A contaminated area or room which is part of the worker decontamination enclosure system with provisions for storage of contaminated clothing and equipment.

Facility: Any institutional, commercial or industrial structure, installation or building.

Facility Component: Any pipe, duct, boiler, tank, reactor, turbine or furnace at or in a facility or any structural member of a facility

Friable Asbestos: Asbestos containing material which can be crumbled to dust, when dry, under hand pressure.

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Glovebag Technique: A method for removing small amounts of material from HVAC ducts, short piping runs, valves, joints, elbows, and other surfaces. The glovebag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process.

Ground Fault Circuit Interrupter: A circuit breaker that is sensitive to very low levels of current leakage from a fault in an electrical system.

HVAC: Heating, ventilation and air conditioning system.

HEPA Filter: A high efficiency particulate air filter capable of removing particles greater than 0.3 microns in diameter with 99.97% efficiency.

HEPA Vacuum: A vacuum system equipped with HEPA filtration.

Holding Area: A chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area. The holding area is comprised of an airlock.

Negative Pressure Ventilation System: A portable exhaust system equipped with HEPA filtration and capable of maintaining a constant low velocity air flow into contaminated areas from adjacent uncontaminated areas.

NESHAPS: The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

NYDEC: New York State Department of Environmental Conservation; Title 6 Part 264

NYS DOL: New York State Department of Labor

NYS DOH: New York State Department of Health; Title 10 Part 73

NYS ICR 56: New York State Industrial Code Rule 56

NIOSH: The National Institute for Occupational Safety and Health, CDC - NIOSH, Building J N.E. Room 3007, Atlanta, Georgia 30333.

OSHA: The Occupational Safety and Health Administration, 200 Constitution Avenue, Washington, D.C. 20210.

OSHA: Title 29 CFR Part 1910

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Owner: The Owner or managing Agent of the building. The Owner's Agent is any entity that the Owner has appointed as their representative.

Plasticize: To cover floors and walls with plastic sheeting as herein specified.

Renovation: Altering in any way one or more facility components. Operations in which load-supporting structural members are wrecked or taken out are excluded.

Shower Room: A room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold or warm running water controllable at the tap and suitably arranged for a complete shower during decontamination. There shall be an airlock at both the entrance and exit of the shower room.

Staging area: Either the holding area or some area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

Surfactant: A chemical wetting Agent added to water to improve penetration.

Visible Emissions: Any emissions containing particulate material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Waste Transfer Airlock: A decontamination system utilized for transferring containerized waste from inside to outside of the work area.

Wet cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with water and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.

Worker Decontamination Enclosure: A decontamination system consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area air locks and contained doorways. This system is used for all worker entries and exits in the work area and for passing out equipment and waste for small jobs.

NOTE: Whenever a conflict exists between one of the above referenced definitions and that from any other applicable regulation or source the most stringent shall apply. The final interpretation must be approved by the Owner.

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END OF SECTION

SECTION 02 08 30 – LEAD ABATEMENT

PART 1 GENERAL

1.1 Definitions

- A. The following commonly used terms are defined in the context of these performance specifications.
1. AALA: American Association for Laboratory Accreditation. Also known as A2LA.
 2. Abatement: For the purposes of these specifications the term 'Abatement' is defined as the mitigation of the lead hazard by means described in the HUD Guidelines. This is not the same as the EPA definition of abatement as it appears in 40 CFR Part 745.
 3. Accredited laboratory: A laboratory that has been evaluated and approved by the National Lead Laboratory Accreditation Program (NLLAP), to perform lead measurement or analysis, usually over a specified period of time.
 4. Adhesion: The ability of dry paint or other coating to attach to a surface and remain fixed on it without blistering, flaking, cracking, or being susceptible to removal by tape.
 5. Administrative removal: The temporary removal of workers from the job to prevent the concentration of lead in their blood from reaching levels requiring medical removal.
 6. AIHA: American Industrial Hygiene Association.
 7. Apparent Lead Concentration (ALC): The x-ray fluorescence (XRF) reading or average of more than one reading on a painted surface. See also XRF analyzer, Substrate Equivalent Lead (SEL), and Corrected Lead Concentration (CLC).
 8. Bare soil: Soil not covered with grass, sod, some other similar vegetation, or paving, including the sand in sandboxes.
 9. Binder: Solid ingredients in a coating that hold the pigment particles in suspension and bind them to the substrate. Binders used in paints and coatings include oil, alkyd, acrylic, latex, and epoxy. The nature and amount of binder determines many of the coating's performance properties-washability, toughness, adhesion, gloss, etc.
 10. Biological monitoring: The analysis of blood, urine, or both to determine the level of lead contamination in the body. Blood lead levels are expressed in micrograms of lead per deciliter (one-tenth of a liter) of blood, or ug/dL. They are also expressed in micro moles per liter (umol/L).
 11. Blood lead threshold: Any blood lead level greater than or equal to 10 ug/dL as defined by the Centers for Disease Control and Prevention. See also Elevated Blood Lead level (EEL) child.
 12. Building component: Any element of a building that may be painted or have dust on its surface, e.g. walls, stair treads, floors, railings, doors, window sills, etc.
 13. Certified Industrial Hygienist (CIH): A person who has passed the 2-day certification exam of the American Board of Hygiene, and who has at least 4 years of experience in industrial hygiene and a graduate degree or a total of 5 years of experience. See also Industrial hygienist.

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14. Chalking: The photo-oxidation of paint binders (usually due to weathering) that causes a powder to form on the surface.
15. Characteristics (of hazardous waste): EPA has identified four characteristics of hazardous waste: ignitability, corrosivity, reactivity, and toxicity (as determined by the TCLP test). Any solid waste that exhibits at least one of these characteristics may be classified as hazardous under the Resource Conservation and Recovery Act (RCRA), depending on how the waste is produced and what quantities are generated. See also Toxicity Characteristic Leaching Procedure (TCLP).
16. Clearing: The process of using a HEPA vacuum and wet cleaning agents to removal leaded dust; the process includes the removal of bulk debris from the work area. OSHA prohibits the use of compressed air to clean lead-contaminated dust from a surface.
17. Clearance examination: Visual examination and collection of environmental samples by an inspector or risk assessor and analysis by an accredited laboratory upon completion of an abatement project, interim control intervention, maintenance job that disturbs lead-based paint (or paint suspected of being lead-based). The clearance examination is performed to ensure that the lead exposure levels do not exceed standards established by the EPA Administrator pursuant to Title IV of the Toxic Substances Control Act, and that any cleaning following such work adequately meets those standards.
18. Clearance examiner: A person who conducts clearance examinations following lead-based paint hazard control and cleanup work, usually a certified risk assessor or a certified inspector.
19. Code of Federal Regulations (CFR): The codification of the regulations of Federal agencies. The regulations are published in the Federal Register. See also Federal Register (FR).
20. Cohesion: Ability of a substance to adhere to itself; internal adhesion; the force holding a substance together.
21. Common area: A room or area that is accessible to all residents in a community (e.g. hallways, or lobbies); in general, any area not kept locked.
22. Competent person: As defined in the OSHA Lead Construction Standard (29 CFR 1926.62), a person who is capable of identifying or predicting hazardous working conditions and work areas, and who has authorization to take prompt, corrective measures to eliminate the hazards. A competent person is not necessarily a risk assessor, or inspector, or abatement project supervisor.
23. Compliance plan: A document that describes the types of tasks, workers, protective measures, and tools and other materials that may be employed in lead-based paint hazard control to comply with the OSHA Lead Exposure in Construction standard.
24. Containment: A process to protect workers and the environment by controlling exposures to the lead-contaminated dust and debris created during abatement, see worksite preparation level.
25. Contingency plan: A document that describes an organized, planned and coordinated course of action to be taken during any event that threatens human health or the environment, such as a fire, explosion, or the release of hazardous waste or its constituents

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from a treatment, storage, or disposal facility.

26. Contractor: means any business entity or person performing the actual abatement project.
27. Corrected Lead Concentration (CLC): The absolute difference between the Apparent Lead Concentration and the Substrate Equivalent Lead. See also Apparent Lead Concentration (ACL) and Substrate Equivalent Lead (SEL).
28. Decontamination enclosure system: A series of connected rooms, for the decontamination of workers or of materials and equipment. Except where specified otherwise, decontamination enclosure system will contain at least one air lock.
29. Deteriorated lead-based paint: Any lead-based paint coating on a damaged or deteriorated surface or fixture, or any interior or exterior lead-based paint that is peeling, chipping, blistering, flaking, worn, chalking, alligatoring, cracking, or otherwise becoming separated from the substance.
30. Discharge or Hazardous Waste Discharge: The accidental or intentional spilling, emitting or dumping of hazardous wastes onto any land or water.
31. Dispersal: The discharge, deposit, injecting, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that any constituent thereof may enter the environment or be emitted into the air or discharge in waters.
32. Disposal (of hazardous waste): The discharge, deposit, injection, dumping, spilling, leaking, or placement of solid or hazardous waste on land or in water so that none of its constituents can pollute the environment by being emitted into the air or discharged into a body of water, including groundwater.
33. Disposal facility: A facility or part of one in which hazardous waste is placed on land or in water to remain there after the facility closes.
34. Elevated Blood Lead Level (EEL) child: A child who has a blood level greater than or equal to 20 ug/dL or a persistent 15 ug/dL. See also Blood lead threshold.
35. Encapsulation: Any covering or coating that acts as a barrier between lead-based paint and the environment, the durability of which relies on adhesion and the integrity of the existing bonds between multiple layers of paint and between the paint and the substrate. See also Enclosure.
36. Enclosure: The use of rigid, durable, construction materials that are mechanically fastened to the substrate to act as a barrier between the lead-based paint and the environment.
37. Engineering controls: Measures other than respiratory protection or administrative controls that are implemented at the work site, to lead-contaminated dust and debris usually in the occupational health setting. The measures include process and product substitution, isolation, and ventilation.
38. Evaluation: Risk assessment, paint inspection, reevaluation, investigation, clearance examination, or risk assessment screen.
39. Exposure monitoring: The sampling and analysis of air both inside and outside the work area to determine the degree of worker and resident exposure to lead or other airborne

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contaminants, often involving air sampling inside a worker's breathing zone.

40. Exterior work area: For lead hazard control work, the exterior work area includes any exterior building components, such as a porch or stairway; the safety perimeter; and access barriers.
41. Facility: All buildings, contiguous land, structures, and other appurtenances, as well as any improvements, where lead-based paint or hazardous waste is treated, stored, or disposed. A facility may consist of several different treatment, storage or disposal units, such as landfills and surface impoundments.
42. Federal Register (FR): A daily Federal publication that contains proposed and final regulations, rules, and notices.
43. Generator: Any person whose act or operation produces hazardous waste identified or listed in 40 CFR Part 261 or whose act causes a hazardous waste to come under regulation (40 CFR 260.20).
44. Generator identification number: The unique number assigned by EPA to each generator, transporter of hazardous waste, and treatment, storage, or disposal facility.
45. Hazardous waste: As defined in EPA regulation (40 CFR 216.3), hazardous waste is solid waste or a combination of solid wastes that because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause or contribute to increases in mortality, serious and irreversible or incapacitating but reversible illnesses, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions; (1) exhibits a characteristic of hazardous wastes (40 CFR Sections 261.20 through 261.24); (2) has been listed as hazardous (40 CFR Section 261.31 through 261.33); (3) is a mixture containing a listed hazardous waste combined with a nonhazardous solid waste; and (4) is not excluded from regulation as hazardous waste. For lead-based paint abatement waste, hazardous waste is waste that contains more than 5 ppm of leach able lead as determined by the TCLP test, or is waste that is corrosive, ignitable or reactive and not otherwise noted. See also RCRA.
46. Heat gun: A device capable of heating lead-based paint causing it to separate from the substrate. For lead hazard control work, the heat stream leaving the gun should not exceed 1,100 F (some authorities may use a different temperature).
47. HEPA/wet wash/HAPA cycle: The cleaning cycle that begins with HEPA vacuuming, followed by a wet wash with a lead cleaning agent, such as trisodium phosphate detergent or another liquid cleaning agent, followed by a final pass with a HEPA vacuum over the surface.
48. High-Efficiency Particulate Air (HEPA) filter: A filter capable of removing particles of 0.3 microns or larger from air at 99.97 percent or greater efficiency.
49. Industrial hygienist: A person having, or currently obtaining a college or university degree in engineering, chemistry, physics, medicine, or a related physical or biological science who, by virtue of special training is qualified to anticipate, recognize, evaluate, and control environmental and occupational hazards for the community and workers, or an environmental technician who maintains certifications and/or have extensive experience in environmental sampling and remediation of a broad range of remediation activities.

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50. Inspection (of paint): A surface - by - surface investigation to determine the presence of lead-based paint (in some cases including dust and soil sampling) and a report of the results.
51. Inspector: An individual who has completed training from an accredited program and been licensed or certified by the appropriate State and Local agency to (1) perform inspections to determine and report the presence of lead-based paint on a surface-by-surface basis through onsite testing, (2) report the findings of such an inspection, (3) collect environmental samples for laboratory analysis, (4) perform clearance testing, and (5) document successful compliance with lead-based paint hazard control requirements or standards.
52. Interior work area: means a hallway, room or group of rooms in which an abatement takes place on the inside of a building.
53. Investigation (pertaining to EEL case): The process of determining the source of lead exposure for a child or other resident with an elevated blood lead level. Investigation consists of a questionnaire, comprehensive environmental sampling, case management, and other measures.
54. Laboratory analysis: A determination of the lead content by atomic absorption spectroscopy, inductively coupled plasma emission spectroscopy, or laboratory-based K or L x-ray fluorescence, or an equivalent method.
55. Landfill: A State-licensed or State-permitted disposal facility that meets municipal solid waste standards. (See Federal regulations at 40 CFR 258).
56. Lead: Lead includes metallic lead and inorganic and organic compounds of lead.
57. Lead-based paint: Any paint, varnish, shellac, or coating that contains lead equal to or greater than 1.0 mg/cm² as measured by XRF or laboratory analysis, or 0.5 percent by weight (5000 ug/g, 5000 mg/kg) as measured by laboratory analysis. (Local definitions may vary).
58. Lead-based paint hazard: A condition in which exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health (as established by the EPA Administrator under Title IV of the Toxic Substances Control Act). Lead-based paint hazards include for example, deteriorated lead-based paint, leaded dust levels above applicable standards, and bare leaded soil above applicable standards.
59. Lead-contaminated dust: Surface dust that contains an area or mass concentration of lead in excess of the standard established by the EPA Administrator, pursuant to Title IV of the Toxic Substance Control Act. Until the EPA standards are set, the HUD recommended clearance and risk assessment standards for leaded dust are 100 ug/sq. Ft. on floors, 500 ug/ sq ft on interior windowsills, and 800 ug/sq ft on window troughs.
60. Lead-contaminated soil: Bare soil that contains lead in excess of the standard established by the EPA Administrator, pursuant to Title IV of the Toxic Substances Control Act. The HUD recommended standard and interim EPA guidance is 400 ug/g in other bare areas of the yard. Soil contaminate with lead at levels greater than or equal to 5000 ug/g should be abated by removal or paving.

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61. Lead-specific detergent: A cleaning agent manufactured specifically for cleaning and removing leaded dust or other lead contamination.
62. Lead zinc: A paint primer made from zinc oxide and lead sulfates.
63. Licensed: Holding a valid license or certification issued by EPA or by an EPA approved State program pursuant to Title IV of the Toxic Substances Control Act. The license is based on certification for lead-based paint hazard control work.
64. Listed waste: A hazardous waste that has been placed on one of three list developed by EPA: nonspecific source wastes, specific source wastes, and commercial chemical products. The lists were developed by examining different types of waste and chemical products to determine if they exhibited one of the four characteristics of hazardous waste (toxicity, corrosivity, ignitability, or reactivity), meet the statutory definition of hazardous waste, were acutely hazardous, or were otherwise toxic.
65. Manifest: The shipping document (EPA Form 8700-22 or a comparable form required by the State or locality) used for identifying the quantity, composition, origin routings and destination of hazardous waste during its transport from the point of generation to the point of treatment, storage, or disposal. Also, a shipping document used to keep track of items being transported. All hazardous waste must be accompanied by manifest. See Hazardous waste.
66. Medical removal: The temporary removal of workers from the job because of the occurrence of elevated blood lead levels as defined in the OSHA Lead Exposure in Construction standard (29 CFR 1926.62).
67. Method detection limit (MDL): The minimum concentration of an analyte that, for a given matrix and method, has a 99 percent probability of being identified, qualitatively or quantitatively measured, and reported to be greater than zero.

NOTE: Whenever a conflict exists between one of the above referenced definitions and that from any other applicable regulation or source the most stringent shall apply. The final interpretation must be approved by the owner or owner's agent.

1.2 Scope of Work

A. Description

The Scope of Work covered by these specifications consists of lead-based paint abatement activities (i.e. on-site removal, encapsulation and off-site disposal) of paint identified with an actionable (greater than or equal to 1.0 mg/cm²) level of lead from various components of the *following school buildings*.

The scope of work under this abatement contract will include only the components with actionable levels of lead (greater than or equal to 1.0 mg/cm²) which will be impacted by the proposed work. This abatement plan has been prepared in accordance with the requirements of the New York State Department of Education utilizing the guidelines established by HUD in their document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*. These specifications are not intended and/or prepared for OSHA compliance with lead-based paint and/or lead dust exposure. It should be assumed that the other painted surfaces that are to be impacted by the proposed work

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contain lead concentrations that did not exceed the above referenced action level.

The scope of work of this abatement project includes the following:

Remove and dispose of the following lead based paint containing building components that are to be impacted by the proposed work in accordance with the procedures and guidelines of these specifications, HUD's document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* and all applicable federal, state and local regulatory agencies having jurisdiction of the work being performed:

See Drawings for Asbestos & Lead locations.

All lead-based paint abatement work shall be performed in accordance with the applicable provisions of OSHA and all other applicable federal, state and local laws, rules and regulations having jurisdiction over this project and includes all aspects of worker safety & protection. All other materials located in the abatement area that are not subject for removal shall be precleaned and protected during the abatement in accordance with these specifications and HUD in their document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.

The lead abatement contractor is responsible for coordinating his work with the other contractors on site so that the building will be protected against any damage (i.e. security, weather, etc.) and all work is completed in a timely fashion.

B. Personnel

- 1 Contractors performing lead-based paint abatement work that is being performed on surfaces containing lead-based paint, that are impacted as a result of reconstruction work, are not required to be EPA trained and certified. However, any work which is being performed strictly for the removal of lead-based paint containing surfaces and lead contaminate dust and soil is considered an EPA abatement project, as defined by the EPA and must comply fully with the EPA Regulations 40 CFR Part 745, including the requirements for EPA training and certified workers.

Also, all workers performing work who may be occupationally exposed to lead must comply with OSHA Regulations which includes safety training and education. The non-EPA abatement project work still require the preparation, removal and disposal of lead based painted building components and shall be carried out by persons trained, qualified and certified in the techniques of abatement and subsequent cleaning, testing and disposal in compliance with all federal, state and local regulations. Workers performing reconstruction lead based paint abatement work are required to have proof of abatement experience (such as a current NYS DOL Handlers Certificate or equal) or proof of training as follows:

- 1.1 Training shall be provided by the Contractor for all employees or agents who may be required to disturb lead contaminated materials for abatement and auxiliary purposes and for all supervisory personnel who may be involved in planning, execution or inspection of abatement projects. Training shall provide, at a minimum, information on the following topics.

The health hazards of lead including the nature of various lead related diseases, routes of exposure, known dose-response relationships, the synergistic relationship between lead exposure, latency periods for disease and health basis for standards.

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Employee personal protective equipment including the types and characteristic of respirators, field testing the face- piece-to face seal (positive and negative pressure fitting tests), qualitative and quantitative fit testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit (e.g. facial hair), selection and use of disposable clothing, use and handling of launderable clothing, non-skid shoes, gloves, eye protection and hard hats.

Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.

Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.

Work practices for lead abatement including purpose, proper construction and maintenance of air-tight plastic barriers, job set-up of air locks, worker decontamination systems and waste transfer air locks, posting of warning signs, engineering controls, electrical and ventilation system lockout, proper working techniques, waste clean-up, storage and disposal procedures.

Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking, chewing and contact lenses in the work area.

Special safety hazards that may be encountered including electrical hazards, air contaminants (CO, wetting agents, encapsulant, materials from Owner or Owner's Agent operation), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress and noise.

Workshops affording both supervisory personnel and abatement workers the opportunity to see (and experience) the construction of containment barriers and decontamination facilities.

Training is to have occurred within 12 months prior to the initiation of abatement activities.

Contractor must document training by providing date of training, training entity, duration of the training, course outline, and names and qualifications of trainers.

- 1.2 The contractor shall also show for each individual who is performing the abatement work, proof of respiratory training, medical examination and respirator fit testing in strict accordance with the most recent regulations having jurisdiction. In addition, the contractor must also provide proof of a company respiratory protection plan in accordance with OSHA.

C. Restoration

The contractor is responsible for the cleaning and removal of all debris located in the work area and surrounding areas after the abatement has been completed. Any damages caused during the performance of abatement activities shall be repaired by the Contractor (ex. Paint peeled off by barrier tape, nail holes, water damage, broken glass, damaged vegetation) at no additional expense to the building owner.

The contractor is responsible for restoring abatement surfaces to conditions acceptable

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to the restoration contractor, building owner and owner's representative. This shall include but is not limited to lingering odors or out gassing from chemical methods of abatement, damage to substrates (ex. flooring, roof decking, etc.) caused by abatement techniques and any other surface or subsurface damaged caused by the abatement technique. The contractor is responsible for the cleaning and removal of all debris located in the work area and surrounding areas after the abatement has been completed.

1.3 Performance of Work

The contractor is required to perform the scope of work in the following sequence and in accordance to the special requirements. Whenever there is a conflict between this schedule and requirements of any applicable regulations the most stringent shall apply.

A. Preparation

The owner shall be responsible to remove all moveable objects from the work area prior to the start of abatement activities.

The contractor shall submit in writing for approval by the building owner or owner's agent all specific building component replacement items, proposed methods of abatement, demolition or remediation methods, enclosure materials, paint removal equipment and/or chemicals, tools, and cleaning supplies.

The contractor is responsible for obtaining any necessary or required building or waste permits; notify local authorities if the local jurisdiction requires it. Also notify occupants of the structure and adjacent structures of the work area and the date when it will begin.

The contractor, the building owner and/or owner's agent shall conduct a preconstruction conference to ensure the contractor fully understands the work involved and that all submittal have been received and approved.

The contractor shall then proceed as follows:

The contractor will inspect the work area, and all areas utilized throughout the project for any unsafe situations or dangerous conditions prior to the beginning of the project. The contractor will then be responsible to take appropriate actions and steps to effectively provide a safe environment for his workers.

The contractor shall then inspect the work area and all other areas that will be utilized throughout the abatement project for any property and/or objects damage that may exist prior to the beginning of the work. This information must be submitted to the owner or owner's agent prior to the start of any work. The contractor will be responsible for obtaining written confirmation of the owner or owner's agent receipt of the submittal. The contractor will be responsible for the repair and/or replacement of any damaged materials and/or objects inside the work area or in the areas utilized by the contractor during the abatement project that were not noted and acknowledged by the owner or owner's agent.

The contractor shall then construct decontamination units as required by these specifications and all applicable regulations. The decontamination units shall be constructed with a plywood, or equal, covering (exterior).

The contractor shall then construct isolation barriers as required by these specifications

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and all applicable regulations.

All areas in which no abatement is to take place will be sealed shut or otherwise isolated from the work area as required by these specifications and all applicable regulations.

Removal of lead shall not commence until the decontamination units and work areas have been inspected and approved by the owner or owner's agent.

B. Abatement

The removal of the lead based painted building components will be performed as required by these specifications in accordance with OSHA, HUD in their document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* and all other applicable federal, state and local laws, rules and regulations having jurisdiction over the work being performed and includes all aspects of worker safety & protection.

After the work area has been rendered free of all visible residues, the contractor shall request a visual inspection of from the owner or owner's agent. It is then the owner or owner's agent discretion whether the work area has been rendered free of all lead-based hazards. The owner reserves the right to have bulk and/or wipe sampling performed in the work area to ensure that sufficient removal and cleaning was performed.

C. Clearance

Clearance testing shall include dust wipe sampling and/or soil sampling where applicable. Clearance sampling protocols and testing results will be performed and evaluated in accordance with HUD criteria as indicated in their document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* as summarized below:

Lead Based Paint Abatement Clearance Criteria	
Bare & Carpeted Floors	100 ug/ft2
Interior Window Sills	500 ug/ft2
Window Troughs	800 ug/ft2
Exterior Concrete or other rough surfaces	800 ug/ft2

D. Special Requirements

The Contractor shall become familiar with special conditions at the site which must be considered during the lead abatement. These conditions include but are not limited to:

Contractor shall be responsible for providing emergency power and lighting to the work area in case of electrical failure, as needed; All power to work areas shall be brought in from outside the work area through a ground fault circuit interrupter at the source. The owner reserves the right to have this electrical system approved by a state licensed electrician.

Contractor must provide a qualified worker to be stationed at the work area entrance to control entry into the work area. This worker must be present at all times while the

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abatement is in progress.

The contractor shall record results of smoke tests of all critical and isolation barriers, at the beginning and end of each shift. Contractor shall designate an individual just for this purpose (if applicable).

There must be a daily pre-construction meeting between the contractor and the owner or owner's agent to schedule the detail of work and work areas for each shift in advance.

A first aid kit must be provided by the Contractor on the premises, sized to correspond to the number of workers present.

The Contractor is responsible for enforcing personal air monitoring of the abatement workers as required. The contractor is also responsible for ensuring that only experienced workers are located within the work area and that they are wearing required respiratory and protective clothing and gear.

The contractor must supply the owner's agent with a waste manifest for all lead or lead contaminated waste removed from the site.

It shall be the contractor's sole responsibility to implement and enforce all relevant OSHA regulations having jurisdiction of the abatement work.

The contractor may not store any lead related waste materials, whether lead waste or construction waste, or construction tools or materials in the work area. The work area must be cleaned and cleared at the end of each shift.

The contractor is required to supply the owner and owner's agents with required respiratory and protective clothing whenever the owner and/or owner's agent desires to enter the work area.

All disposal of waste materials will be performed in accordance with all applicable federal, state and local laws, rules and regulations. This includes the proper removal and disposal of all hazardous and regulated waste generated in conjunction with the abatement and any demolition work.

The contractor will be responsible for the security of the work area and the storage of lead contaminated waste until its removal from the site. This includes any access into the building

The contractor will be responsible for the cross contamination of lead dust or suspect lead debris to non-work areas or areas utilized during the abatement project. In the event that a non-work area is suspect of having been contaminated the contractor is responsible for the proper cleaning and clearance of these areas. It will be the owner or owner's agents' discretion that these areas have been sufficiently cleaned based upon their visual inspection and/or clearance sampling. This includes, but is not limited to, debris falling in public areas, air plenums and other spaces. The contractor will be responsible for reimbursement to the owner for any additional costs incurred as a result of the cross contamination.

1.4 Applicable Standards and Guidelines

- A. All work under this contract shall be done in strict accordance with these specifications

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and in accordance with OSHA, HUD in their document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* and all other applicable federal, state and local laws, rules and regulations having jurisdiction over the work being performed and includes all aspects of worker safety & protection, including, but not limited to the following:

New York State Department of Environmental Conservation 6NYRR Subparts 371-376

Code of Federal Regulations (CFR) Publications:

29 CFR Part 1926.62 Lead Exposure in Construction; Final Rule Vol. 58, No. 84

40 CFR 61 Subpart A General Provisions (Hazardous Air Pollutants Listing)

40 CFR 61.152 Standard for waste Manufacturing, Demolition, Renovation, Spraying and Fabricating Operations

40 CFR 241 Guidelines for the Land Disposal of Solid Waste

40 CFR 257 Criteria for Classification of Solid Waste

40 CFR 261 & 262 waste Disposal Facilities & Practices

American National Standards Institute ANSI Publications

Z88.22-80 Practices for Respiratory Protection

Z87.1 Eye Protection

National Institute of Occupational safety & Health (NIOSH) Publications:

Manuel of Analytical Methods, 2nd Edition, Volume 1, Physical & Chemical Analysis Method (P&CAM)

The most recent edition of any relevant regulation, standard, document or codes shall be in effect. Where conflict among the requirements or with these specifications exists the most stringent requirements shall be utilized.

Copies of all standards, regulations, codes and other applicable documents, including this specification shall be available at the worksite in the clean change area of the worker decontamination system. These documents will be supplied by the Contractor.

1.5 Submittal and Notices

The following items shall be submitted to the Architect for review ten (10) days prior to the commencement of work associated with this section of the specifications. No work shall begin until all submittals are received and approved.

A Contractor shall prior to Commencement of Work:

The contractor shall submit in writing for approval by the building owner or owner's agent all specific building component replacement items, proposed methods of abatement, demolition or remediation methods, enclosure materials, paint removal equipment and/or chemicals, tools, and cleaning supplies. The proposed method of abatement should include a detailed explanation of the plan to abate the lead-based paint.

The contractor is responsible for obtaining any necessary or required building or waste permits; notify local authorities if the local jurisdiction requires it. Also notify occupants of the structure and adjacent structures of the work area and the date when it will begin.

In addition, all other notifications required by federal, state or local laws and regulations, will be made by the contractor within the required time period. The contractor shall submit proof that all required permits and notifications have been submitted and received.

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- B. At the owner or owner's agents request the contractor shall provide the following:

Submit all documentation satisfactory to the Building Owner or Owner's Agent that the Contractor's employees, including foremen, supervisors and any other company personnel or agents who may be exposed to airborne lead dust or who may be responsible for any aspects of abatement activities, have received adequate training in accordance with these specifications.

Submit documentation from a physician that all employees or agents who may be exposed to airborne lead in excess of background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that personnel have received medical monitoring as required in OSHA 29 CFR. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g., high temperature, humidity, chemical contaminants) that may impact on the employees' ability to perform work activities.

Submit documentation of respirator fit testing for all Contractor employees and agents who must enter the work area. This fit testing shall be in accordance with qualitative procedures as detailed in the OSHA Safety & Health Standards 29 CFR.

Name and address of the proposed monitoring testing laboratory, and a written description of the proposed method of measuring air samples.

- C. During Abatement Activities:

Prepare daily job progress reports detailing abatement activities. Include review of progress major problems and actions taken, injury reports, equipment breakdown, etc.

Prepare copies of all transport manifests, trip tickets and disposal receipts for all lead waste materials removed from the work area during the abatement process.

Prepare daily, copies of worksite entry logbooks with information on worker and visitor access.

Prepare daily logs documenting filter changes on respirators, HEPA vacuums, negative pressure ventilation units, and other engineering controls if required.

Prepare results of air sampling data collected during the course of the abatement for OSHA compliance air monitoring.

Prepare and have available upon request, results of any lead sampling & analysis data that is collected during the course of the abatement.

1.6 Site Security

The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractor's employees, Owner or Owner's Agent employees and representatives, state and local inspectors and any other designated individuals. A list of authorized personnel shall be established prior to job start and be posted in the clean room area.

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Entry into the work area by unauthorized individuals shall be reported immediately to the Building Owner or Owner's Agent by the Contractor.

A logbook shall be maintained in the clean-room area of the decontamination facility. Anyone who enters the work area must record name, affiliation, time in, and time out for each entry.

Contractor shall have control of site security during abatement operations whenever possible, in order to protect work efforts and equipment.

1.7 Emergency Planning

Emergency planning shall be developed prior to abatement initiation by the Contractor.

Emergency procedures shall be in written form and prominently posted in the clean room area and equipment room of the worker decontamination area. Prior to entering the work area, everyone must read and sign these procedures to acknowledge receipt and understanding of work site layout, the location of emergency exits and emergency procedures.

Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, confined spaces and heat related injury. Written procedures shall be developed by the Contractor and Contractor's employees shall be trained in emergency procedures. Upon completion of training, the employee will sign a document indicating full understanding of the procedures.

Employees shall be trained in evacuation procedures in the event of workplace emergencies.

For life threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove him/her from the workplace and secure proper medical treatment.

Telephone numbers of all emergency response personnel shall be prominently posted in the clean room area and equipment room, along with the location of the nearest telephone.

PART 2 - MATERIALS

2.1 Materials

Whenever a conflict exists between one of the following statements and that from any other applicable regulation or source the most stringent shall apply. The final interpretation must be approved by the owner or owner's agent.

A. General

Deliver all materials in the original packages, containers or bundles bearing the name of the manufacturer and the brand name (where applicable).

Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Replacement materials shall be stored outside of the work area until abatement is completed. No waste

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may be stored in the work area overnight. All waste must be removed at the end of each shift.

Areas utilized outside the work area used for storage must be maintained in a neat and safe manner.

Disposal bags shall be of 6 mil polyethylene, pre- printed with labels as required by EPA, OSHA and Department of Transportation regulations.

B Removal

Surfactant (wetting agent) shall be a 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester, or equivalent, mixed in a proportion of 1 fluid ounce to 5 gallons of water or as specified by manufacturer. (An equivalent surfactant shall be understood to mean a material with a surface tension of 29 dynes/cm as tested in its properly mixed concentration, using ASTM approved methods. Where work area temperature may cause freezing of the amended water solution, the addition of ethylene glycol in amounts sufficient to prevent freezing is permitted.

Glove bags shall be a minimum 6 mils. thick clear poly bags with permanently attached arms with latex gloves specially designed for removing lead-containing material from pipes.

Encapsulating agent is not to be applied to surfaces from which lead containing material has been stripped.

2.2 Equipment

A. General

A sufficient number of negative pressure ventilation units equipped with HEPA filtration and operated in accordance with ANSI and EPA guidance documents.

Full body disposable protective clothing, including head, body and foot coverings consisting of material impenetrable by lead dust (Tyvek R or equivalent) shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing.

Additional safety equipment (e.g., hard hats meeting the requirements of ANSI Standard Z89.1- 1981, eye protection meeting the requirements of ANSI Standard Z87.1-1979, safety shoes meeting the requirements of ANSI Standard Z41.1-1967, disposable PVC gloves necessary, shall be provided to all workers and authorized visitors.

B Removal

A sufficient supply of scaffolds, ladders, lifts and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

Sprayers with pumps capable of providing 500 pounds per square inch (psi) at the nozzle tip at a flow rate of 2 gallons per minute for spraying amended water.

Rubber dustpans and rubber squeegees shall be provided for cleanup.

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Brushes utilized for removing loose lead containing material shall have nylon or fiber bristles, not metal.

A sufficient supply of HEPA filtered vacuum systems shall be available during cleanup.

PART 3 - METHOD

Whenever a conflict exists between one of the following statements and that of from any other applicable regulation or source the most stringent shall apply. The final interpretation must be approved by the owner or owner's agent.

3.1 Worker & Employee Personnel Protection Requirements

A. Training

Prior to commencement of abatement activities all personnel who will be required to enter the work area or handle containerized lead containing materials must have received adequate training and certification. Special on-site training on equipment and procedures unique to this job site shall be performed as required. Training in emergency response and evacuation procedures shall be provided.

B. Respiratory Protection

Respiratory protection shall be provided to workers in accordance with OSHA and the submitted written respiratory protection program which shall meet the requirements of the most recent regulations having jurisdiction over respiratory protection.

C. Testing

Workers must perform positive and negative air pressure fit tests each time a respirator is put on, whenever the respirator design so permits. Powered air-purifying respirators shall be tested for adequate flow as specified by the manufacturer. All other testing of respiratory protection devices shall be performed in strict accordance with the most recent regulations having jurisdiction over respiratory protection.

D. Protective Clothing

Disposable clothing including head, foot and full body protection shall be provided in sufficient quantities and adequate sizes for all workers and authorized visitors and shall be worn in strict accordance with the most recent regulations having jurisdiction over protective clothing.

E. Personal Monitoring

Sampling shall be conducted in in strict accordance with the most recent regulations having jurisdiction over personal monitoring.

3.2 Medical Monitoring

Medical Monitoring must be provided by the Contractor to any employee or agent that may be exposed to lead in excess of background levels during any phase of the abatement project in in strict accordance with the most recent regulations having jurisdiction over employee medical monitoring.

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3.3 Work Area Preparation

3.3.1 General

The contractor shall submit in writing for approval by the building owner or owner's agent all specific building component replacement items, proposed methods of abatement, demolition or remediation methods, enclosure materials, paint removal equipment and/or chemicals, tools, and cleaning supplies.

The contractor is responsible for obtaining any necessary or required building or waste permits; notify local authorities if the local jurisdiction requires it. Also notify occupants of the structure and adjacent structures of the work area and the date when it will begin.

The contractor, the building owner and/or owner's agent shall conduct a preconstruction conference to ensure the contractor fully understands the work involved and that all submittal have been received and approved.

The Contractor shall post caution signs meeting the specifications of OSHA 29 CFR 1910.1001 (j) (1) (ii) at any location and approaches to a location where airborne concentrations of lead may exceed ambient background levels. Signs shall be posted at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional signs may need to be posted following construction of workplace enclosure barriers.

The Contractor shall ensure that HVAC Systems are shut down and seal all intake and exhaust vents in the work area with duct tape and 6-mil polyethylene. Also seal any seams in system components that pass through the work area. Remove all HVAC system filters and place in labeled 6-mil polyethylene bags for staging and eventual disposal as lead contaminated waste.

The Contractor shall seal off all windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, skylights and any other openings between the work area and uncontaminated areas outside of the work area (including the outside of the building, tunnels and crawl spaces) with 6-mil polyethylene sheeting and duct tape.

The Contractor shall Pre-clean contaminated moveable objects within the work area using a HEPA filtered Vacuum and/or wet cleaning methods as appropriate. After cleaning, these objects shall be removed from the work area.

The Contractor shall pre-clean all fixed objects in the work area.

The Contractor shall pre-clean all surfaces in the work area using HEPA filtered vacuums and/or wet cleaning methods as appropriate. Do not use any methods that would raise dust such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not disturb lead containing materials during the pre-cleaning phase.

Prepare the hazardous building component for removal. Turn off and disconnect any electrical circuits inside or near the building component to be removed. All electrical circuits shall be locked and tagged in accordance with all applicable regulations.

The contractor must construct a worker, waste and equipment decontamination system. The decontamination systems shall be provided at all locations where workers will enter or

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exit the work area. The worker decontamination system shall be constructed as to provide an adequate procedure to successfully decontaminate the worker, equipment and all waste generated as to avoid the cross contamination of the non-work areas. A proposed decontamination system design must be submitted by the contractor and approved by the owner or owner's agent.

One layer of fire-retardant plastic shall be placed on the ground extending 25 feet beyond the perimeter of working surfaces. Do not anchor ladder feet on top of plastic (puncture the plastic to anchor ladders securely to ground). For all other exterior plastic surfaces, protect plastic with boards to prevent puncture from falling debris, nails, etc., if necessary. Raise edges of plastic to create a basin to prevent contaminated runoff in the event of unexpected precipitation. Secure plastic to side of building with tape or other anchoring system (no gaps between plastic and building). Weight all plastic sheets down with two-by-fours or similar objects. Keep all windows within 25 feet of working surfaces closed. For exterior abatement projects the contractor is responsible for placing the plastic in such a fashion that they do not damage or kill any vegetation. Any damage caused to the surrounding vegetation will be the responsibility of the contractor.

Plastic shall be sized to minimize seams. If the floor area necessitates seams, those on successive layers of sheeting shall be staggered to reduce the potential for water to penetrate to the underlying soils or paved surfaces. A distance of at least 6 feet between seams is sufficient. Floor sheeting, if utilized shall extend at least 16 inches up the sidewalls of the work area and fasten securely to the wall. Sheeting shall be installed in a fashion to prevent slippage between successive layers of material. (Vinyl sheeting may be used for improved traction on floors).

3.3.2 Exterior Abatement Projects

The owner and/or owner's agent will collect pre abatement soil samples, which may not have to be analyzed until post abatement soil samples have been collected, analyzed, and compared to clearance standards. If post abatement soil levels are below applicable limits, the pre abatement samples need not be analyzed.

The contractor must erect temporary fencing or warning barrier tape at a 25-foot perimeter around working surfaces (or less if distance to next building is less than 25 feet). If an entryway is within 25 feet of working surfaces require use of alternative entryway. If practical install vertical containment to prevent exposure. Use a locked dumpster, covered truck, or locked dumpster, covered truck, or locked room to store debris before disposal.

In the instances when playground equipment, toys, sandboxes, etc. are within the work environment the contractor shall remove all movable items to a 25-foot distance from working surfaces. Items that cannot be readily moved to 25-foot distance can be sealed with taped plastic sheeting.

3.4 Removal

Wet all lead paint containing surfaces with an amended water solution using equipment capable of providing a fine spray mist, in order to reduce airborne dust concentrations when the material is disturbed (unless electrical circuits are nearby).

Saturate the material to the substrate, however, do not allow excessive water to accumulate in the work area. Keep all removed material wet enough to prevent dust

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release until it can be containerized for disposal. Maintain a high humidity in the work area by misting or spraying to assist in dust settling and reduce airborne concentrations.

Using a utility knife or other sharp instrument, carefully score all affected painted seams. This will provide space for a pry instrument and will minimize paint chipping and dust generation during removal.

Remove any screws or other fasteners. Using a flat pry instrument and a hammer, carefully pry the affected building component away from the surface to which it is attached. The pry bar should be inserted into the seam at the nail (or other fastening device) at one end of the component and pressure applied. This process should be repeated at other fastening locations until the end of the component is reached. By prying in this manner, the component will be removed intact and chip and dust generation will be minimized. A pry point pad or softener may be required to minimize damage to adjoining substrates. Wider replacement trim can sometimes be used to cover adjacent area damage. When the entire structure is to be demolished, the demolition should be performed in such a manner as to minimize the release of dust.

Wrap and seal bulk components in plastic and take them to covered truck or secured waste storage area along pathways covered with plastic.

Mist and then shovel any debris. HEPA vacuum any dust or chips in the area where the component was located. Using an airless spray, lightly mist the component to be removed with water to help keep the dust down during the removal process. Before applying the water, be sure there are no electrical circuits inside the component. (If electrical circuits are present inside the component, they must be turned off and disconnected before removal).

Since there is often a considerable amount of leaded dust underneath or behind the component being removed, begin cleanup immediately after the individual component has been removed.

Carefully remove or bend back all nails (or other fastening devices) and wrap the component in 6-mil plastic sheeting and seal with duct tape. Wrapping components in plastic may not be necessary if the work area and surrounding areas are vacant and if the truck and the pathway to the truck are lined with plastic. Use a high-efficiency particulate air (HEPA) vacuum to remove any dust that may have accumulated behind the components as soon as they have been removed. Dispose of wrapped components properly.

Conduct ongoing cleaning during the job, including regular removal of large and small debris and dust. Decontamination of all tools, equipment, and worker protection gear is required before it leaves containment areas. Electrical equipment should be wiped and high-efficiency particulate air (HEPA) vacuumed, not wetted down, to minimize electrocution hazards.

Schedule sufficient time (usually 30 minutes to 1 hour) for a complete daily cleaning, starting at the same time near the end of each workday after lead hazard control activity has ceased.

Do not conduct work if wind speeds are greater than 20 miles per hour. Work must stop and cleanup must occur before rain begins.

Do not leave debris or plastic out overnight if work is not completed. Keep all debris in

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secured area until final disposal.

Correct any existing conditions that could impede the abatement work (e.g. trash removal, structural deficiencies).

Store all waste in a secure area and make sure it is properly labeled with an accumulation start date.

3.5 Clean Up Procedures

The contractor is responsible for having sufficient cleaning equipment and supplies before beginning final cleaning work. For final cleaning, wait at least 1 hour after active lead hazard control activity has ceased to let dust particles settle.

Remove and containerize all visible accumulation of lead paint containing materials and lead waste contaminated debris utilizing rubber dust pans and rubber squeegees to move material around. Do not use metal shovels to pick up or move accumulated waste. Special care shall be taken to minimize damage to floor sheeting.

Wet clean all surfaces in the work area using rags, mops and sponges as appropriate. (Note: Some HEPA vacuums might not be wet-dry vacuums. To pick up excess water and gross wet debris, a wet-dry shop vacuum may be used. This will be contaminated and require cleaning prior to removal from the work area).

Decontaminate all tools and equipment and remove at an appropriate time in the cleaning sequence.

Use a vacuum cleaner equipped with a HEPA exhaust filter. HEPA vacuum all surfaces in the room (ceilings, walls, trim, and floors). Start furthest from the exit a work down moving toward the entry door. Completely clean each room before moving on.

The work area shall be cleaned until it is in compliance with Federal, State and Local requirements and no visible residue is observed.

Have an independent, certified inspector technician or risk assessor conduct a clearance examination after waiting at least 1 hour after cleanup has been completed to let dust settle.

If clearance is not achieved, repeat cleaning and/or complete abatement work. Repeat clearance examination and, if clearance is achieved, obtain any required formal release or certificate of completion required by the U.S. Department of Housing and Urban Development (HUD) or local authorities.

Conduct clearance and reclean if necessary.

Following the satisfactory completion of clearance air monitoring, remaining barriers may be removed and properly disposed of. A final visual inspection shall insure that no contamination remains in the work area. Unsatisfactory conditions may require additional cleaning and air monitoring.

3.6 Clearance

Clearance testing shall include dust wipe sampling and/or soil sampling where applicable.

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Clearance sampling protocols and testing results will be performed and evaluated in accordance with HUD criteria as indicated in their document *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* as summarized below:

Lead Based Paint Abatement Clearance Criteria	
Bare & Carpeted Floors	100 ug/ft ²
Interior Window Sills	500 ug/ft ²
Window Troughs	800 ug/ft ²
Exterior Concrete or other rough surfaces	800 ug/ft ²

3.7 Re-establishment of the Work Area and Systems

Re-establishment of the work area shall only occur following the completion of clean-up procedures and after clearance air monitoring has been performed and documented to the satisfaction of the Building Owner or Owner's Agent.

Polyethylene barriers shall be removed from walls and floors at this time, maintaining decontamination enclosure systems and barriers over doors, windows, etc. as required.

3.8 Waste Disposal

All waste generated as part of the abatement project must be sampled and analyzed to determine its RCRA Toxicity Characteristic. All sampling, analysis and waste characterization must be performed in accordance with RCRA.

Based upon the results of the RCRA TCLP analysis the waste shall be disposed of in accordance with all applicable federal, state and local regulations.

While architectural components may or may not be regulated as hazardous waste, they still must be properly managed. All building components coated with lead-based paint should be stored in a secure, locked area. They should not be sold or released to anyone who might reinstall them in other dwelling.

Building component replacement and demolition generate a considerable amount of waste material. Lead-contaminated building components and demolition debris should be handled carefully, even if they are not regulated a hazardous wastes. Bulk debris such as doors, windows, and trim should be wrapped in 6-mil plastic and sealed with tape. Smaller debris should be swept into 6-mil plastic bags after spraying.

All debris should be removed from the site as soon as possible. In larger jobs where a dumpster is being used, it may be possible to eliminate the wrapping and bagging of bulk debris as long as the dumpster has a lockable lid and is lined with plastic and secured with a fence and signs. Pathways to the dumpster should be lined with plastic so as not contaminate the area.

Contaminated building components and demolition debris should be transported in covered vehicles to an appropriate disposal facility. Old building components coated with lead-based paint must not be recycled.

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3.10 Transportation Procedures

Transportation and disposal of lead or lead contaminated materials must be performed in strict accordance with the most recent regulations having jurisdiction over the transportation of lead or lead contaminated waste. All dump receipts, trip tickets, transportation manifests or other documentation of disposal shall be delivered to the Building Owner or Owner's Agent for his records.

3.11 Lead Abatement Monitor

The owner will be responsible for retaining the services of an independent third-party industrial hygienist to monitor the contractor's activities in accordance with these specifications. However, the review of the contractor's submittal, pre-project meetings, the final clearance of the abatement project and preparation of the project close out package must be performed by an EPA Certified Lead Inspector and Risk Assessor.

3.12 Laboratory Services

The owner shall be responsible for retaining the services of an independent testing laboratory to perform and fulfill the sampling analysis requirements in accordance with these specifications and HUD.

Laboratories utilized for analyzing air samples by NIOSH 7400 method shall be certified under the New York State Environmental Laboratory Approval Program (ELAP). Laboratories for lead or National Laboratory Approval Program (NLAP).

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

GENERAL

RELATED DOCUMENTS

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

SUMMARY

This Section includes the following:

Demolition and removal of selected portions of building or structure.

Related Sections include the following:

Division 01 Section "Summary" for use of premises and Owner-occupancy requirements.

Division 01 Section "Cutting and Patching" for cutting and patching procedures.

DEFINITIONS

Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

NOT USED

QUALITY ASSURANCE

Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

Standards: Comply with ANSI A10.6 and NFPA 241.

PROJECT CONDITIONS

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

Owner will occupy the building during construction but not the area of work (existing weight and wrestling rooms). Conduct selective demolition so Owner's operations will not be disrupted.

Comply with requirements specified in Division 01 Section "Summary."

Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

Before selective demolition, Owner will remove the following items:

Any items which the Owner wishes to retain for salvage or re-use.

Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

Hazardous materials have been removed by Owner under a separate contract. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

Storage or sale of removed items or materials on-site is not permitted.

Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

Maintain fire-protection facilities in service during selective demolition operations.

WARRANTY

Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PRODUCTS (Not Used)

EXECUTION

EXAMINATION

Verify that utilities have been disconnected and capped.

Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

Comply with requirements for existing services/systems interruptions specified in Division 01 Section "Summary."

Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

Arrange to shut off indicated utilities with utility companies.

If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

PREPARATION

Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

Cover and protect furniture, furnishings, and equipment that have not been removed.

SELECTIVE DEMOLITION, GENERAL

General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.

Maintain adequate ventilation when using cutting torches.

Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.

Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

Dispose of demolished items and materials promptly.

Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.

Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

DISPOSAL OF DEMOLISHED MATERIALS

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

Do not allow demolished materials to accumulate on-site.

Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

Burning: Do not burn demolished materials.

Disposal: Transport demolished materials off Owner's property and legally dispose of them.

CLEANING

Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Footings.
 - 2. Foundation walls.
 - 3. Slabs-on-grade.
 - 4. Suspended slabs.
- B. Related Sections:
 - 1. Section 312000 "Earth Moving" for drainage fill under slabs-on-grade.
 - 2. Section 321313 "Concrete Paving" for concrete pavement and walks.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments. Design mixes shall be from a certified testing agency and shall be signed and sealed by a New York State professional engineer.
 - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

- D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
 - 1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and reshoring installation and removal.
- E. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
 - 1. Location of construction joints is subject to approval of the Architect.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and testing agency.
- B. Welding certificates.
- C. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Form materials and form-release agents.
 - 4. Steel reinforcement and accessories.
 - 5. Fiber reinforcement.
 - 6. Waterstops.
 - 7. Curing compounds.
 - 8. Floor and slab treatments.
 - 9. Bonding agents.
 - 10. Adhesives.
 - 11. Vapor retarders.
 - 12. Semirigid joint filler.
 - 13. Joint-filler strips.
 - 14. Repair materials.
- D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates.
- E. Floor surface flatness and levelness measurements indicating compliance with specified tolerances.
- F. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
 - 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete,".
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- F. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
 - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

- a. High-density overlay, Class 1 or better.
 - b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
 - c. Structural 1, B-B or better; mill oiled and edge sealed.
 - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.
- D. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.
- E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Plain-Steel Wire: ASTM A 82/A 82M.
- C. Deformed-Steel Wire: ASTM A 496/A 496M.
- D. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.

2.3 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar

supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.4 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 1. Portland Cement: ASTM C 150, Type I or Type IA.
- B. Normal-Weight Aggregates: ASTM C 33, Class 3S or Class 1N coarse aggregate or better, graded. Provide aggregates from a single source.
 1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.
 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Lightweight Aggregate: ASTM C 330, 3/4-inch nominal maximum aggregate size.
- D. Water: ASTM C 94/C 94M and potable.

2.5 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- C. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C 494/C 494M, Type C.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Axim Italcementi Group, Inc.; CATEXOL CN-CI.
 - b. BASF Construction Chemicals - Building Systems; Rheocrete CNI.

- c. Euclid Chemical Company (The), an RPM company.
 - d. Grace Construction Products, W. R. Grace & Co.; DCI.
 - e. Sika Corporation; Sika CNI.
- D. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.
- 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. BASF Construction Chemicals - Building Systems; Rheocrete 222+.
 - b. Cortec Corporation.
 - c. Grace Construction Products, W. R. Grace & Co.; DCI-S.
 - d. Sika Corporation; FerroGard 901.

2.6 WATERSTOPS

- A. Flexible Rubber Waterstops: CE CRD-C 513, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.
- 1. Manufacturers: Subject to compliance with requirements.
 - 2. Profile: Flat, dumbbell with center bulb or Ribbed with center bulb.
 - 3. Dimensions: 4 inches by 3/16 inch thick; nontapered.

2.7 VAPOR RETARDERS

- A. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
- 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle Coatings & Waterproofing, Inc.; Blackline 400.
 - b. Fortifiber Building Systems Group.
 - c. Grace Construction Products, W. R. Grace & Co.; Florprufe 120.
 - d. Insulation Solutions, Inc.
 - e. Meadows, W. R., Inc.
 - f. Raven Industries Inc.
 - g. Reef Industries, Inc.
 - h. Stego Industries, LLC; Stego Wrap.
- B. Sheet Vapor Retarder: ASTM E 1745, Class B. Include manufacturer's recommended adhesive or pressure-sensitive tape.
- 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. Fortifiber Building Systems Group; Moistop Ultra 6.
- b. Raven Industries Inc.
- c. Stego Industries, LLC; Stego Wrap, 10 mil Class A.

2.8 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Axim Italcementi Group, Inc.; CATEXOL CimFilm.
 - b. BASF Construction Chemicals - Building Systems; Confilm.
 - c. ChemMasters; SprayFilm.
 - d. Conspec by Dayton Superior; Aquafilm.
 - e. Dayton Superior Corporation; Sure Film (J-74).
 - f. Edoco by Dayton Superior; BurkeFilm.
 - g. Euclid Chemical Company (The), an RPM company; Eucobar.
 - h. Kaufman Products, Inc.; Vapor-Aid.
 - i. Lambert Corporation; LAMBCO Skin.
 - j. L&M Construction Chemicals, Inc.; E-CON.
 - k. Meadows, W. R., Inc.; EVAPRE.
 - l. Metalcrete Industries; Waterhold.
 - m. Nox-Crete Products Group; MONOFILM.
 - n. Sika Corporation; SikaFilm.
 - o. SpecChem, LLC; Spec Film.
 - p. Symons by Dayton Superior; Finishing Aid.
 - q. TK Products, Division of Sierra Corporation; TK-2120 TRI-FILM.
 - r. Unitex; PRO-FILM.
 - s. Vexcon Chemicals, Inc.; Certi-Vex Envio Set.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Anti-Hydro International, Inc.; AH Curing Compound #2 DR WB.
 - b. BASF Construction Chemicals - Building Systems; Kure 200.
 - c. ChemMasters; Safe-Cure Clear.
 - d. Conspec by Dayton Superior; W.B. Resin Cure.
 - e. Dayton Superior Corporation; Day-Chem Rez Cure (J-111-W).
 - f. Edoco by Dayton Superior; Res X Cure WB.

- g. Euclid Chemical Company (The), an RPM company; Kurez W VOX; TAMMSCURE WB 30C.
- h. Kaufman Products, Inc.; Thinfilm 420.
- i. Lambert Corporation; AQUA KURE - CLEAR.
- j. L&M Construction Chemicals, Inc.; L&M Cure R.
- k. Meadows, W. R., Inc.; 1100-CLEAR.
- l. Nox-Crete Products Group; Resin Cure E.
- m. Right Pointe; Clear Water Resin.
- n. SpecChem, LLC; Spec Rez Clear.
- o. Symons by Dayton Superior; Resi-Chem Clear.
- p. TK Products, Division of Sierra Corporation; TK-2519 DC WB.
- q. Vexcon Chemicals, Inc.; Certi-Vex Enviocure 100.

2.9 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.
- B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
 - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- D. Reglets: Fabricate reglets of not less than 0.022-inch-thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.
- E. Dovetail Anchor Slots: Hot-dip galvanized-steel sheet, not less than 0.034 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.10 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
 - 4. Compressive Strength: Not less than 4000 psi at 28 days when tested according to ASTM C 109/C 109M.

- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
 - 4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

2.11 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
 - 4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
- C. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings: Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: 4500 psi at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.40 .
 - 3. Slump Limit: 5 inches plus or minus 1 inch.
 - 4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
- B. Foundation Walls: Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: 4500 psi at 28 days.
 - 2. Maximum Water-Cementitious Materials Ratio: 0.40.

3. Slump Limit: 5 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.

C. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 4500 psi at 28 days.
2. Slump Limit: 4 inches, plus or minus 1 inch.
3. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
4. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

D. Suspended Slabs: Proportion structural lightweight concrete mixture as follows:

1. Minimum Compressive Strength: 4000 psi at 28 days.
2. Calculated Equilibrium Unit Weight: 115 lb/cu. ft. plus or minus 3 lb/cu. ft. as determined by ASTM C 567.
3. Slump Limit: 4 inches, plus or minus 1 inch.
4. Air Content: 6 percent, plus or minus 2 percent at point of delivery for nominal maximum aggregate size greater than 3/8 inch.
5. Air Content: Do not allow air content of trowel-finished floors to exceed 3 percent.

2.13 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.14 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
 - 1. Class A, 1/8 inch for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - 1. Install keyways, reglets, recesses, and the like, for easy removal.
 - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
 - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
 - 3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 72 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

- A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
 - 1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.
- C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 VAPOR RETARDERS

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Lap joints 6 inches seal with manufacturer's recommended tape.

3.6 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
 - 3. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
 - 4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 - 5. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.
 - 2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.

3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
- E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 WATERSTOPS

- A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.

3.9 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.

3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 4. Slope surfaces uniformly to drains where required.
 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- G. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.10 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
 2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to

one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighen until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 1. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
 2. Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
 - a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15.
 3. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch.
- C. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated. While concrete is still plastic, slightly scarify surface with a fine broom.
 1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.
- D. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.12 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.
- D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel finish concrete surfaces.

3.13 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.
4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.14 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 1. Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.15 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 2. After concrete has cured at least 14 days, correct high areas by grinding.
 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
 5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
 7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried.

Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.16 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
- C. Inspections:
 - 1. Steel reinforcement placement.
 - 2. Steel reinforcement welding.
 - 3. Headed bolts and studs.
 - 4. Verification of use of required design mixture.
 - 5. Concrete placement, including conveying and depositing.
 - 6. Curing procedures and maintenance of curing temperature.
 - 7. Verification of concrete strength before removal of shores and forms from beams and slabs.
- D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 - 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd. plus one set for each additional 50 cu. yd. or fraction thereof.
 - 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 - 3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - 4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
 - 5. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - 6. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.

7. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
 8. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
 9. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
 10. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
 11. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
 12. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
 13. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 14. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- E. Measure floor and slab flatness and levelness according to ASTM E 1155 48 hours of finishing.

3.17 PROTECTION OF LIQUID FLOOR TREATMENTS

- A. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

END OF SECTION 033000

SECTION 061000 - ROUGH CARPENTRY

GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

SUMMARY

This Section includes the following:

- Wood blocking and nailers.
- Wood furring and grounds.

DEFINITIONS

Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.

Exposed Framing: Dimension lumber not concealed by other construction.

SUBMITTALS

Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

Include copies of warranties from chemical treatment manufacturers for each type of treatment.

Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the American Lumber Standards Committee Board of Review.

QUALITY ASSURANCE

Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.

DELIVERY, STORAGE, AND HANDLING

SECTION 006100 - ROUGH CARPENTRY

Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PRODUCTS

WOOD PRODUCTS, GENERAL

Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.

Factory mark each piece of lumber with grade stamp of grading agency.
Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
Provide dressed lumber, S4S, unless otherwise indicated.
Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

WOOD-PRESERVATIVE-TREATED MATERIALS

Preservative Treatment by Pressure Process: AWPAC2 (lumber) and AWPAC9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPAC31 with inorganic boron (SBX).

Preservative Chemicals: Acceptable to authorities having jurisdiction.

For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber and plywood. Do not use material that is warped or does not comply with requirements for untreated material.

Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.

Application: Treat all rough carpentry, unless otherwise indicated.

Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

Wood framing members less than 18 inches above grade.

Wood floor plates that are installed over concrete slabs directly in contact with earth.

MISCELLANEOUS LUMBER

SECTION 061000 - ROUGH CARPENTRY

General: Provide lumber for support or attachment of other construction, including the following:

- Blocking.

- Nailers.

- Grounds.

For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with 19 percent maximum moisture content.

For concealed boards, provide lumber with 15 percent maximum moisture content.

FASTENERS

General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M of Type 304 stainless steel.

Nails, Brads, and Staples: ASTM F 1667.

Power-Driven Fasteners: CABO NER-272.

Wood Screws: ASME B18.6.1.

Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

Lag Bolts: ASME B18.2.1.

Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.

- Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

- Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1.

MISCELLANEOUS MATERIALS

Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chlorpyrifos as its active ingredient.

SECTION 006100 - ROUGH CARPENTRY

EXECUTION

INSTALLATION, GENERAL

Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

Apply field treatment complying with AWPAC M4 to cut surfaces of preservative-treated lumber and plywood.

Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

CABO NER-272 for power-driven fasteners.

Published requirements of metal framing anchor manufacturer.

Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in the Uniform Building Code.

Table 2305.2, "Fastening Schedule," in the BOCA National Building Code.

Table 2306.1, "Fastening Schedule," in the Standard Building Code.

Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.

Use finishing nails for exposed work, unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches (38 mm) wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

Stagger joints in built-up nailers. Stagger nails over the lengths of the built-up nailers. Do not place nails directly opposite the nails on the opposite side of built-up nailers. Rip cut

SECTION 061000 - ROUGH CARPENTRY

nailers to make shims to suit insulation thicknesses, and to fit configurations of existing constructions, as shown on the Drawings. Fasten ends of single nailers 6 inches in from each end. Install pressure treated wood shims at 16 inches on center where shims in built-up nailers are noted on the drawings. Always install nails through the shimmed portions of the built-up nailers, not through the space between the shims. Brush treat site-sawn of nailers and cants with preservative.

WOOD FRAMING INSTALLATION, GENERAL

Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.

END OF SECTION 061000

SECTION 072700 - FIRESTOPPING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide firestopping at all penetrations and juncture joints of fire-rated walls, floors and ceilings in accordance with the requirements of the Building Code of the State of New York and MEA Standards.

1.02 RELATED SECTIONS

- A. Electrical.....Div. 16

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. Underwriters Laboratories, Inc. (UL)
- C. National Fire Protection Association (NFPA)
- D. Warnock Hersey

1.04 SUBMITTALS

- A. Submit manufacturer's instructions for installing firestopping.
- B. Submit manufacturer's certifications that materials and systems meet or exceed the specified requirements.
- C. Submit certification stating that firestopping has been completed in full accordance with requirements of this Section and of the Building Code of New York State.
- D. Submit two copies of certified test reports of:
 - 1. Fire test reports of firestopping system application to substrate materials similar to project conditions.
 - 2. Reports from reputable independent testing agencies of product proposed for use, which indicate conformance to ASTM E-814 (Fire Tests of Through-Penetration Firestops).

1.05 QUALITY ASSURANCE

- A. All firestopping Work shall be performed by a Subcontractor who will be acceptable to the firestopping manufacturer in the application of its products and systems.
- B. Manufacturer
 - Minimum of 5 years successful experience in manufacture of firestopping material.

SECTION 072700 - FIRESTOPPING

C. Regulatory Requirements

Conform to U.L. requirements and to requirements of the Building Code of the State of New York and Materials and Equipment Acceptance (MEA) Standards. Provide MEA approval certification for systems and materials.

D. Comply with the following:

1. ASTM E-84 - Surface Burning Characteristics of Building Materials.
2. ASTM E-814 - Fire Tests of Through Penetration Firestops.
3. U.L.-1479 - Fire Tests of Through-penetration Firestops.
4. U.L.- Fire Resistance Directory; Through-Penetration Firestop Systems (XHEZ), and Fill, Void or Cavity Materials (XHHW).
5. U. L. 723 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.06 CONTROLLED INSPECTIONS

- A. Provide controlled inspection for all firestopping in accordance with Art. 1.02, Section 01400 of the Specifications.

1.07 SYSTEM DESCRIPTION

A. Technical Requirements

1. Firestopping materials shall be UL Classified as "Fill, Void or Cavity Material" for use in Through-Penetration Firestop Systems.
2. Firestop Systems shall provide a fire resistance rating at least equal to the hourly resistance rating of the fire-rated barrier.
3. Firestop Systems shall have been tested in accordance with ASTM E-814 or UL 1479 under a minimum positive pressure of 0.01 in. of water.

B. General Considerations

1. Firestop Systems do not re-establish the structural integrity of load bearing partitions. Contractor consult the Owner's Representative prior to penetrating any load bearing assembly.
2. Firestop systems are not intended to support live loads or traffic. Contractor shall consult the Owner's Representative if there is reason to believe these limitations may be violated.
3. When more than one firestop system design is applicable, individual characteristics should be evaluated for secondary benefits in performance, e.g. water/air sealing, ease of installation/modification, or building movement.

1.08 DEFINITIONS

- A. Penetration: Any opening or foreign material passing through or into a fire-rated barrier.
- B. Fire-Rated: Have the ability to withstand the effects of a standard fire exposure for a specified time period, as determined by qualified testing.
- C. Fire-Rated Barrier: A floor, wall, partition or floor-ceiling assembly able to withstand a standard fire and hose stream test without failure.
- D. Fire resistance rating: The ability of a structure to act as a barrier to the spread of fire and to confine it to the area of origin. Ratings are expressed in hours and apply to beams, columns, floors, ceilings, roofs, walls and partitions.
- E. Firestopping: A means of sealing openings in fire-rated barriers to preserve or restore the fire resistance rating.
- F. Firestop System: A material, or combination of materials, installed to retain the integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke or gases through penetrations in fire-rated barriers. It shall be used in specific locations as follows:
 - 1. Penetrations for the passage of duct, cable, cable tray, conduit, piping and electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor slabs and floor/ceiling assemblies), and vertical service shafts.
 - 2. Openings between floor slabs and curtain walls.
 - 3. Openings between structurally separate sections of walls or floors.
 - 4. Construction Joints between the top of walls and: floor or roof slab and steel deck assemblies, or, concrete floor or roof slab.
 - 5. Vertical service shafts at each floor level.
 - 6. Expansion joints in walls and floors.
 - 7. Openings and penetrations in fire-rated partitions or walls containing fire doors.
 - 8. Locations shown specifically on the Drawings or where specified in other Sections of the Specifications (refer to Sections noted in 1.02 RELATED SECTIONS).

1.09 MOCK UP

- A. Install, on representative substrates (on site), one mock-up of each type of firestopping system to be used on Project, for each fire rating required and for each

SECTION 072700 - FIRESTOPPING

type of wall, floor, and ceiling. Acceptable mock-up installations may remain as part of the completed work.

1.10 MANUFACTURER'S WARRANTY

- A. Manufacturer shall provide a written warranty stipulating that its products and systems used in this Project, if installed for the respective product or system in accordance with the manufacturer's recommendations, shall provide the firestopping specified in this Section, as indicated by its UL rating for that specific installation.

The warranty shall not include either or both of the following statements, or variations thereof:

"Owner or User shall determine suitability of the product or system for its intended use and assume all risks and liabilities connected therewith".

and,

"Owner or User shall test application of product or system for its specific use".

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Hilti Construction Chemicals, Inc., Tulsa, OK.
- B. The Carborundum Company, Niagara Falls, NY.
- C. 3M Fire Protection Products, St. Paul, MN.
- D. Bio Fireshield, Inc., Concord, MA
- E. Tremco Sealant Division, Tremco LTD, Toronto, Ontario, Canada.
- F. Specified Technologies, Inc., Somerville, NJ

2.02 MATERIALS

- A. Grout and sealant systems shall meet or exceed requirements as specified in Part 1 of this Section and shall be acceptable to the Owner.
- B. Firestopping systems shall meet the requirements of ASTM E-814, which include, but are not limited to, the following:
 - 1. Prevent flame pass-through.
 - 2. Restrict temperature to not exceed 325 degrees F over ambient on side of assembly opposite flames.
 - 3. Provide a positive smoke seal.

SECTION 072700 - FIRESTOPPING

4. Withstand hose stream test.
- C. Firestopping materials shall be asbestos-free, emit no toxic or combustible fumes and be capable of maintaining an effective barrier against flame, smoke, gas, and water in compliance with requirements of this Section.
- D. Firestopping materials/systems shall be flexible to allow for normal movement of building structure and penetrating items(s) without affecting the adhesion or integrity of the system.
- E. Firestopping materials shall not require hazardous waste disposal of used containers/packages.
- F. On insulated pipe, the fire-rating classification must not require the removal of the insulation.
- G. Firestopping materials shall be free of solvents and shall not experience shrinkage while curing.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine and confirm the compatibility of surfaces to receive firestopping materials. Verify that surfaces are sound, clean and dry and are ready to receive the firestopping.
- B. Verify that penetration elements are properly located and securely fixed, with the proper space between the penetration element and surfaces of the opening.

3.02 PREPARATION

- A. Protect adjacent surfaces and equipment from damage.
- B. Clean surfaces of opening.

3.03 INSTALLATION

- A. Install firestopping system in strict accordance with the manufacturer's instructions to obtain the fire-rating required at the specific location.
- B. Provide escutcheons for piping at each side of penetration.

3.04 FIELD QUALITY CONTROL

- A. Inspect all installations to ensure that all work meets the requirements specified.

3.05 CLEANING

- A. Remove excess materials, droppings, and debris; remove excess materials from adjacent surfaces.

SECTION 072700 - FIRESTOPPING

3.06 PROTECTION

- A. Protect firestopping installations from damage until completion of all Project Work.

END OF SECTION

SECTION 079000 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Preparing sealant substrate.
- B. Sealant and backing.

1.2 RELATED WORK

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions of these Specifications.

1.3 REFERENCES

- A. ANSI/ASTM D1056 - Flexible Cellular Materials - Sponge or Expanded Rubber.
- B. ANSI/ASTM D1565 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open-Cell Foam).
- C. ASTM C804 - Use of Solvent-Release Type Sealants.
- D. FS TT-S-00227 - Sealing Compound: Elastomeric Type, MultiComponent.
- E. FS TT-S-00230 - Sealing Compound: Elastomeric Type, Single Component.
- F. SWI (Sealing and Waterproofers Institute) - Sealant and Caulking Guide Specification.

1.4 SUMMARY

- A. This Section includes joint sealants for the following locations:
 - 1. Joints in vertical surfaces and horizontal surfaces as indicated below:
 - a. Curtain wall components and assemblies.
 - b. Joints between window and door frames and abutting materials.
 - c. Joints between new work and existing surrounding materials.
 - d. Vertical joints at corners where one or more walls is tiled.
 - e. Horizontal joints at materials (countertops, millwork, etc.) abutting tile wall finishes.

1.5 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.

1.6 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product Data from manufacturers for each joint sealant product required.
- C. Certification by joint sealant manufacturer that sealants plus the primers and cleaners required for sealant installation comply with local regulations controlling use of volatile organic compounds.

SECTION 079000 - JOINT SEALANTS

- D. Samples for initial selection purposes in form of manufacturer's standard bead samples, consisting of strips of actual products showing full range of colors available, for each product exposed to view.
- E. Samples for verification purposes of each type and color of joint sealant required. Install joint sealant samples in 2 inch wide joints formed between two 6 inch long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- F. Certificates from manufacturers of joint sealants attesting that their products comply with specification requirements and are suitable for the use indicated.
- G. Qualification Data complying with requirements specified in "Quality Assurance" article. Include list of completed projects with project names, addresses, names of Architects and subcontractors.
- H. Compatibility and adhesion test reports from elastomeric sealant manufacturer indicating that materials forming joint substrates and joint sealant backings have been tested for compatibility and adhesion with joint sealants. Include sealant manufacturer's interpretation of test results relative to sealant performance and recommendations for primers and substrate preparation needed to obtain adhesion.
- I. Product test reports for each type of joint sealants indicated, evidencing compliance with requirements specified.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer with ten (10) years of continuous joint sealant installation experience who has completed joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.
- B. Single Source Responsibility for Joint Sealant Materials: Obtain joint sealant materials from a single manufacturer for each different product required.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, and curing time.
- B. Store and handle materials in compliance with manufacturer's recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.9 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of joint sealants:
 - 1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer.
 - 2. When joint substrates are wet or otherwise detrimental to proper adhesion.
- B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than or greater than allowed by joint sealant manufacturer for application indicated.

SECTION 079000 - JOINT SEALANTS

- C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors: Provide color sealants to comply with the following:
 - 1. Provide selections made by Architect from manufacturer's full range of standard colors for products of type indicated.

2.2 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing elastomeric sealants that comply with ASTM C 920, Grade.
- B. Products:

Sika	Sikaflex 2C
Pecora	Dynatrol II
Tremco	Dymeric

2.3 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material and type that are non-staining, are compatible with joint substrates, sealants, primers and other joint fillers, and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Plastic Foam Joint Fillers: Preformed, compressible, resilient, non-staining, non-waxing, non-extruding strips of flexible plastic foam of material indicated below and of size, shape, and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
 - 1. Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, non-outgassing in unruptured state.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous

SECTION 079000 - JOINT SEALANTS

surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.

- C. Masking Tape: Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer and Owner's representative present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance. Do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings testing and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean concrete, masonry, unglazed surfaces of ceramic tile, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
 - 3. Remove laitance and form release agents from concrete.
 - 4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where recommended by joint sealant manufacturer based on preconstruction joint sealant- substrate tests. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

SECTION 079000 - JOINT SEALANTS

- B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 962 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Installation of Sealant Backing: Install sealant backings to comply with the following requirements:
 - 1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - a. Do not leave gaps between ends of joint fillers.
 - b. Do not stretch, twist, puncture, or tear joint fillers.
 - c. Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.
 - 2. Install bond breaker tape between sealants where backer rods are not used between sealants and joint fillers or back of joints.
- D. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool to form smooth uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
 - 1. Provide concave joint configuration per Figure 5A in ASTM C 62, unless otherwise indicated.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that and installations with repaired areas are indistinguishable from original work.

END OF SECTION

SECTION 081100 - STEEL DOORS AND FRAMES

GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

SUMMARY

This Section includes the following:
Steel door frames.

Related Sections include the following:
Division 8 Section "Flush Wood Doors" for wood doors installed in steel frames.
Division 8 Section "Finish Hardware" for door hardware.

DEFINITIONS

Steel Sheet Thicknesses: Thickness dimensions, including those referenced in ANSI A250.8, are minimums as defined in referenced ASTM standards for both uncoated steel sheet and the uncoated base metal of metallic-coated steel sheets.

SUBMITTALS

Product Data: For each type of door and frame indicated, include door designation, type, level and model, material description, core description, construction details, label compliance, sound and fire-resistance ratings, and finishes.

Shop Drawings: Show the following:

- Elevations of each door design.
- Details of doors including vertical and horizontal edge details.
- Frame details for each frame type including dimensioned profiles.
- Details and locations of reinforcement and preparations for hardware.
- Details of each different wall opening condition.
- Details of anchorages, accessories, joints, and connections.
- Coordination of glazing frames and stops with glass and glazing requirements.

Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for factory-finished doors and frames.

Samples for Verification: For each type of exposed finish required, prepare a sample not less than 3 by 5 inches and of same thickness and material indicated for final unit of Work.

Door Schedule: Use same reference designations indicated on Drawings in preparing schedule for doors and frames. See Page A-60.

QUALITY ASSURANCE

SECTION 081100 - STEEL DOORS AND FRAMES

Steel Door and Frame Standard: Comply with ANSI A 250.8, unless more stringent requirements are indicated.

Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 252.

DELIVERY, STORAGE, AND HANDLING

Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.

Inspect doors and frames on delivery for damage, and notify shipper and supplier if damage is found. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect. Remove and replace damaged items that cannot be repaired as directed.

Store doors and frames at building site under cover. Place units on minimum 4-inch- high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber. If door packaging becomes wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.

PRODUCTS

MANUFACTURERS

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Steel Door Frames:

Amweld Building Products, Inc.
Benchmark Commercial Doors; a division of General Products Co., Inc.
Ceco Door Products; a United Dominion Company.
Copco Door Co.
Curries Company.
Deansteel Manufacturing, Inc.
Kewanee Corporation (The).
Mesker Door, Inc.
Pioneer Industries Inc.
Republic Builders Products.
Steelcraft; a division of Ingersoll-Rand.

MATERIALS

SECTION 081100 - STEEL DOORS AND FRAMES

Hot-Rolled Steel Sheets: ASTM A 569/A 569M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

Cold-Rolled Steel Sheets: ASTM A 366/A 366M, Commercial Steel (CS), or ASTM A 620/A 620M, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness.

Metallic-Coated Steel Sheets: ASTM A 653/A 653M, Commercial Steel (CS), Type B, with an A40 zinc-iron-alloy (galvannealed) coating; stretcher-leveled standard of flatness.

Electrolytic Zinc-Coated Steel Sheet: ASTM A 591/A 591M, Commercial Steel (CS), Class B coating; mill phosphatized; suitable for unexposed applications; stretcher-leveled standard of flatness where used for face sheets.

FRAMES

General: Provide steel frames for doors, transoms, sidelights, borrowed lights, and other openings that comply with ANSI A250.8 and with details indicated for type and profile. Conceal fastenings, unless otherwise indicated.

Frames of 0.0598-inch- thick (16 Gage) steel sheet for:
Level 2 steel doors.
Wood doors where indicated.

Door Silencers: Except on weather-stripped frames, fabricate stops to receive three silencers on strike jambs of single-door frames and two silencers on heads of double-door frames.

Plaster Guards: Provide 0.016-inch- thick, steel sheet plaster guards or mortar boxes to close off interior of openings; place at back of hardware cutouts where mortar or other materials might obstruct hardware operation.

Supports and Anchors: Fabricated from not less than 0.042-inch- thick, electrolytic zinc-coated or metallic-coated steel sheet.

Wall Anchors in Masonry Construction: 0.177-inch- diameter, steel wire complying with ASTM A 510 may be used in place of steel sheet.

Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc-coated items are to be built into exterior walls, comply with ASTM A 153/A 153M, Class C or D as applicable.

FABRICATION

General: Fabricate steel door and frame units to comply with ANSI A250.8 and to be rigid, neat in appearance, and free from defects including warp and buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site.

Exterior Door Construction: For exterior locations and elsewhere as indicated, fabricate doors, panels, and frames from metallic-coated steel sheet. Close top and bottom

SECTION 081100 - STEEL DOORS AND FRAMES

edges of doors flush as an integral part of door construction or by addition of 0.0598-inch-thick, metallic-coated steel channels with channel webs placed even with top and bottom edges.

Core Construction: Manufacturer's standard core construction that produces a door complying with SDI standards.

Clearances for Non-Fire-Rated Doors: Not more than 1/8 inch at jambs and heads, except not more than 1/4 inch between pairs of doors. Not more than 3/4 inch at bottom.

Clearances for Fire-Rated Doors: As required by NFPA 80.

Single-Acting, Door-Edge Profile: Square edge.

Double-Acting, Door-Edge Profile: Round vertical edges with 2-1/8-inch radius.

Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."

Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.

Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.

Unless otherwise indicated, provide thermal-rated assemblies with U-value of 0.41 Btu/sq. ft. x h x deg F or better.

Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements in ANSI A250.6 and ANSI A115 Series specifications for door and frame preparation for hardware.

Frame Construction: Fabricate frames to shape approved in shop drawing submittals. For interior applications, fabricate knock-down frames with mitered or coped corners, for field assembly. Verify throat depth before ordering.

Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

Locate hardware as indicated on Shop Drawings or, if not indicated, according to ANSI A250.8.

Glazing Stops: Manufacturer's standard, formed from 0.032-inch-thick steel sheet.

Provide nonremovable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.

Provide screw-applied, removable, glazing stops on inside of glass, louvers, and other panels in doors.

Astragals: As required by NFPA 80 to provide fire ratings indicated.

SECTION 081100 - STEEL DOORS AND FRAMES

FINISHES

Prime Finish: Manufacturer's standard, factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.

Factory-Applied Paint Finish: Manufacturer's standard, factory-applied paint finish complying with ANSI A250.3 for performance and acceptance criteria.

Color and Gloss: As selected by Architect from manufacturer's full range.

EXECUTION

INSTALLATION

General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

Placing Frames: Comply with provisions in SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

Except for frames located in existing walls or partitions, place frames before construction of enclosing walls and ceilings.

In masonry construction, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.

In existing concrete or masonry construction, provide at least three completed opening anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Set frames and secure to adjacent construction with bolts and masonry anchorage devices.

In metal-stud partitions, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Attach wall anchors to studs with screws.

For in-place gypsum board partitions, install knock-down, drywall slip-on frames.

Install fire-rated frames according to NFPA 80.

Door Installation: Comply with ANSI A250.8. Fit hollow-metal doors accurately in frames, within clearances specified in ANSI A250.8. Shim as necessary to comply with SDI 122 and ANSI/DHI A115.1G.

Fire-Rated Doors: Install within clearances specified in NFPA 80.

ADJUSTING AND CLEANING

Prime-Coat Touchup: Immediately after installation, sand smooth any rusted or damaged areas of prime coat and apply touch up of compatible air-drying primer.

SECTION 081100 - STEEL DOORS AND FRAMES

Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION

SECTION 082110 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SECTION INCLUDES

Provide flush wood doors, complete in place with finish hardware installed, where shown on the drawings, as specified herein, and as needed for a complete and proper installation.

1.2 RELATED WORK

- A. Documents affecting work of this section include, but are not necessarily limited to General Provisions and Supplemental Conditions of these specifications.
- B. Section 08111: Standard Steel Doors and Frames
- C. Section 08710: Finish Hardware

1.3 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, comply with the ARCHITECTURAL WOODWORK INSTITUTE, (AWI), "Architectural Woodwork Quality Standards", Section 1300, for the grade or grades specified.

1.4 SPECIFIED PRODUCT WARRANTY

- A. Warranty: All doors covered in this specification shall be guaranteed for the life of original installation against defects in materials and workmanship, including but not limited to:
 - 1. Delamination in any degree.
 - 2. Warp or twist of 1/4" or more.
 - 3. Telegraphing of any part of core unit to cause surface variation of 1/100 inch or more in any 3" span.
 - 4. Any defect which renders the door useless for intended purpose.

Warranty includes hanging, installation of hardware and finishing.

1.5 SUBMITTALS

- A. Comply with pertinent provisions of Section 01300.
- B. Product Data:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturers' specifications and other data needed to prove compliance with the specified requirements.

SECTION 082110 - FLUSH WOOD DOORS

3. Samples, approximately 12" x 12" in size, of each of the proposed door face materials.

C. Shop Drawings:

Indicate schedule of doors showing location, size, thickness, openings and type of construction.

1.6 PRODUCT HANDLING

A. Comply with pertinent provisions of Division 1.

B. Delivery:

1. Deliver doors to site after plaster and cement are dry, and after the building has reached average prevailing humidity of its locality.
2. Deliver pre-finished doors in manufacturer's original containers, clearly marked with manufacturer's name, brand name, size, thickness, and identifying symbol on the covering.
3. Seal all four edges of unfinished doors when delivered to the job site.

C. Storage:

1. Stack flat on 2" x 4" lumber, laid 12" from ends and across center.
2. Under bottom door and over top of stack, provide plywood or corrugated cardboard to protect door surfaces.
3. Store doors in area where there will be no great variations in heat, dryness, and humidity.

D. Do not drag doors across one another; lift doors and carry them into position.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Provide 1 3/4" thick flush wood doors of the types, designs, shown on the Door Schedule on the Drawings. Provide mineral core for all rated doors as shown on the Door Schedule. Provide C labeled doors with a fire resistance of minimum 45 minutes.
- B. Grade: Except as may be shown otherwise on the drawings, fabricate the work of this section to "custom grade" standards of the referenced organization.
- C. Species: For all flush wood doors, provide full selection of rotary-cut red oak and white oak for finish.
- D. Acceptable Manufacturers or approved equal:
1. WEYERHAEUSER CO.
 2. EGGERS HARDWOOD PRODUCTS CORP.
 3. ALGOMA HARDWOODS INC.

2.2 WOOD VENEER FACED SOLID CORE WOOD DOORS

SECTION 082110 - FLUSH WOOD DOORS

- A. Interior Flush Wood Doors: 2-5 ply face panel construction each side over a solid glued wood block (stave) core bonded to stiles and rails, complying with AWI SLC-5.
 - 1. Exposed Surfaces for Transparent Finish: AWI Premium Grade.
 - a. Face Veneer Cut and Species: Rotary cut, matched, natural red or white oak face panels. Veneer grade shall be AA.
 - b. Face Veneer Matching:
 - 1) Matching of Pairs and Sets of Doors: Continuous sequence of veneer on door faces. Comply with additional requirements for veneer quality and matching.
 - 2) Matching of Doors & Transoms: Where door and transom panels are not interrupted by transom bar or similar trim, furnish continuous grain sequence match between door and transom panel (end matched) with full length face veneers. Comply with additional requirements for veneer quality and matching.
 - 3) Label door and panel assembly match relationships to insure proper field assembly.
- B. Light and Louver Openings: Fully trimmed openings. comply with the applicable provisions of the referenced standards for core treatment and stop application.
 - 1. Light Openings for Non-Fire Rated Doors: Factory cut openings. Trim openings with solid wood moldings.
 - 2. Vision panel frame shall be Low Profile Metal Vision Frame by Anemostat Door Products.
 - 3. Louver Openings for Non-Fire Rated Doors: Factory cut openings for louvers specified. Factory install louvers and trim in prepared openings.

2.3 FACTORY FINISHING, PREFITTING, AND PREPARATION FOR HARDWARE

- A. Factory Finishing: Pre-finish wood doors at the factory or finishing shop as follows:
 - 1. Comply with AWI factory finishing recommendations including final sanding requirements.
 - 2. Finishing System: Comply with the requirements of the following AWI Finish System:
 - a. Transparent Finish: System No. 3 - Alkyd-Urea Conversion Varnish, Premium Grade.
 - 1) Sheen: Satin-medium rubbed effect; 10 to 20 degrees.
- B. Factory Pre-fitting and Pre-machining for Hardware: Pre-fit doors scheduled or indicated to receive factory finishing. Pre-machine these doors for hardware.
 - 1. Comply with AWI clearance requirements for pre-fitting. Machine doors for hardware requiring cutting of doors. Comply with finish hardware schedule, door frame shop drawings, and hardware templates to insure proper fit and alignment of doors and hardware.

SECTION 082110 - FLUSH WOOD DOORS

2. Verify hardware mortises in steel frames in the field to verify dimensions and proper alignment prior to proceeding with factory machining of doors.
3. Provide adequate blocking for hardware including closures and exit devices so that mounting can be done without sex bolts.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Fitting and Machining:

1. Unless doors are completely fitted and machined at the mill, fit them for width by planning and fit them for height by sawing:
 - a. Bottom: 2" clearance maximum.
 - b. Top: 1/8" clearance maximum.
 - c. Lock edge and hinge edge: Bevel 1/8" in 2" maximum.
2. Machine doors for hardware in accordance with recommendations of the hardware manufacturers, as these recommendations have been approved by the Architect.

B. Receive and retain custody of finish hardware furnished for the work of this section under Section 08710 of these Specifications, and except as otherwise directed by the Architect, install all such finish hardware in strict accordance with the recommendations of its manufacturer.

C. Replace or re-hang doors which are hinge bound and do not swing or operate freely.

3.3 COMPLIANCE

- A. The Owner reserves the right to request and pay for an inspection by a representative of the referenced organization to determine that the work of this section has been performed in accordance with the specified standards.
- B. In the event such inspection determines that the work of this section does not comply with the specified requirements, immediately remove the non-complying items and replace them with items complying with the specified requirements, all at no additional cost to the Owner, and reimburse the Owner for the cost of the inspection.

END OF SECTION

SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Required: Provide all labor, materials, tools, plant equipment, transportation; and perform all operations necessary for and reasonably incidental to proper execution, and completion of furnishing all Finish Hardware; whether specifically mentioned or not, as indicated, specified and/or implied, to satisfactory complete this project. Some of the items/work specified herein is:
1. Review drawings and specifications of all other trades that might in any manner be affected by work of this section. Consult with other trades to expedite and coordinate materials and labor.
 2. Furnish all Finish Hardware indicated on drawings and specified herein. When taking off quantities, check drawings, details, and specification carefully to see that all items are included. Contractor must furnish all hardware complete for entire project, in spite of inadvertent omission of some finishing items from specifications. Include all trim attachments and fastenings, specified or required, for proper and complete installation.
 3. Deliver to the job site those items of Finish Hardware scheduled to be installed at the job site, and deliver direct to manufacturers items required to be factory installed.
 4. Coordinate with door supplier to assure proper provision on reinforcing for hardware installation requirement at doors and frames.

1.2 QUALITY ASSURANCE

A. Code and Regulations

1. Except as otherwise indicated on the drawings or specified herein, work under this section shall conform to the applicable requirements of the local Building Code and regulations of government.
2. Where requirements indicated on the drawings or specified herein differ from the Building Code or the requirements of the governmental authorities having jurisdiction, the more stringent requirements shall govern.
3. Provide hardware for fire rated openings in compliance with NFPA Standard No. 80 and local Building Code requirements.
Provided hardware shall be tested and listed by Underwriters' Laboratories or Factory Mutual for types and sizes of doors required.
4. Door hardware shall comply with NFPA 101 & SED MPS S105.

SECTION 087100 – DOOR HARDWARE

- B. Industry Standards: Except as otherwise indicated on the drawings or specified herein, the following industry standards shall apply to work under this section and shall refer only to the current editions of the industry standards, unless otherwise indicated. Where requirements indicated on the drawings or specified herein differ from the following industry standards, the more stringent requirements shall govern: Door and Hardware Institute Standards.
- C. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.
- D. Provide the services of a member of the American Society of Architectural Hardware Consultant (AHC), who shall be available for consultation with the Architect and owner at no additional cost to the owner during the course of construction. Hardware must be compatible with and match existing hardware and keying.
- E. At completion of the project, the Contractor shall report to the Architect on the completeness of the installation. If necessary, a manufacturer's representative shall be made available to supervise any minor adjustments required.
- F. Furnish a written guarantee of all hardware under this section against defective materials and workmanship for a period of five (5) years or manufacturer's guarantee period, whichever is greater, after the date of acceptance by Facility.
- G. All applicable hardware shall comply with ADA handicapped code.

1.3 SUBMITTALS

- A. Immediately upon award of contract, submit samples of products in correct finish to the Architect for his approval. At the same time, prepare & submit complete Hardware Schedule, Materials List, Catalog Cuts, and Proposed Keying Schedule.
 - 1. Hardware: Immediately after the award of the contract, the Contractor shall prepare, and submit for approval, six (6) copies of a hardware schedule listing hardware to be provided under this contract. Manufacturers, catalog references, type numbers, finish and location of each item identified with door, etc. shall be furnished. Lists not complying with the above will be considered incomplete and will be returned for revision.
 - 2. Content of Hardware Schedule: Organize schedule into "Hardware Sets" indicating complete designations of every item required for each door opening. The following information shall be included:
 - a. Type, style, function, size and finish of each hardware item.
 - b. Name and manufacturer of each item.
 - c. Fastenings and other pertinent information.

SECTION 087100 – DOOR HARDWARE

- d. Location of hardware set, cross-referenced to indications in Drawings, both in Floor Plans and in Door Schedule.
 - e. Explanation of abbreviations, symbols, codes, etc. contained in Schedule.
 - f. Door and frame sizes and materials.
 - g. Mounting locations for hardware.
- 3. Keying: Immediately after the award of the contract, the Contractor shall prepare and submit for approval, six (6) copies of a complete keying schedule.
- 4. After schedules have been approved, Contractor shall provide Architect with six (6) final copies.
- B. Templates shall be furnished to door manufacturers in a timely manner to assure orderly progress of the work. Hardware supplier will be responsible for review and coordination of shop details to insure elimination of conflicting items.
- C. Manufacturers and products listed herein are to establish function, design, and quality. Equal products of alternate manufacturers are permissible if accepted in advance by the Architect, because an item specified is not available.
- D. Approval of this submitted Hardware Schedule and Materials List by the Architect will not relieve the Contractor of the responsibility to provide all Finish Hardware items required for this work, even though such required items may have been omitted on approved list.

1.4 PRODUCT HANDLING, DELIVERY AND STORAGE

- A. Individually package each unit of Finish Hardware complete with proper fastenings and appurtenances clearly marked on the outside to indicate contents and specific locations per the Hardware Schedule.
- B. Hardware required for shop application shall be delivered to the factory or factories of the other respective metal subcontractors at the subcontractor's expense and in ample time so as not to impede the progress of their work.
- C. Wrapping furnished by the manufacturer on knobs, handles, push plates and pulls shall be of adhesive coated paper, of a type easily removed without marring the Finish of the hardware.
- D. Inventory hardware jointly with representatives of hardware supplier and hardware installer until each is satisfied that count is correct.
- E. Provide secure lockup for hardware delivered to the project, but not yet installed. Control handling and installation of hardware items which are not immediately replaceable, so that completion of the work will not be delayed by hardware losses, both before and after

SECTION 087100 – DOOR HARDWARE

installation.

1.5 PROJECT CONDITIONS

- A. Review drawings and specifications of other trades whose details might in any manner be affected by work of this section. Consult with other trades to expedite and coordinate materials and labor.
- B. Furnish finish hardware indicated on drawings and specified herein. When taking off quantities, check drawings, details and specifications carefully to see that all items are included. Contractor shall furnish hardware complete for entire project, in spite of inadvertent omission of some finishing items from the specifications. Include trim attachments and fastenings specified or otherwise required, for proper and complete installation.
- C. Final Adjustment
 - 1. Whenever hardware installation is made more than one month prior to acceptance or occupancy of space or area, return to the work during the week prior to acceptance or occupancy to make a final check and adjustment of hardware items. Clean operating items as necessary to restore proper function, finish of hardware and doors.
 - 2. The Contractor will final adjust every door closer device, to compensate for final operation of heating and ventilating equipment.
 - 3. The Contractor shall provide the services of the manufacturer's representative who shall inspect the manufacturer's material furnished under this section and report to the Contractor and Architect any repairs, adjustments and replacements necessary to make the hardware function properly. Final payment will not be authorized until all such work is completed.
 - 4. Instruct Owner's personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware. Provide Owner's personnel with complete factory maintenance manuals, copies of hardware instruction installation sheets furnished with material. Furnish a complete set of any specialized tools required for continued maintenance by Owner's personnel.

1.6 WARRANTY

- A. Warranty: Submit copies of manufacturer warranties, for each type of hardware on this project.
- B. Warranty Period: Minimum of 3 years after the date of Substantial Completion, greater if stated by the hardware manufacturer.
- C. The warranty shall not deprive the Owner of other rights or remedies that the Owner may have under other provisions of the Contract Documents and is in addition to and runs concurrent with other warranties made by the Contractor under requirements of the

SECTION 087100 – DOOR HARDWARE

Contract Documents.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All hardware items shall be provided as specified herein, and as indicated on Door Schedule or architectural drawings.

2.2 KEYING

- A. Plainedge High School doors to have <TBD> key system to match existing and keyed as directed by Brett Prochazka, Director of Facilities at 516-992-7422.
- B. Provide a minimum of six (6) keys of each Grandmaster, Master, or Sub-Master as directed by owner. Provide ten (10) Construction Master keys, and two (2) Construction Control keys.
- C. Provide a minimum of three (3) blank change keys per cylinder and six (6) additional blanks per cylinder.
- E. Upon completion of the building, the supplier shall coordinate delivery of all permanent cores, change keys, master keys, and grandmaster keys to the building authorized representative. All keys shall be properly tagged to indicate which cylinders they operate.

2.4 FINISH HARDWARE TYPES

- A. Door Closers:
 - 1. All door closers shall be heavy duty, surface mounted, hydraulic type, with high strength cast cases, full rack, and pinion construction. Closers shall have adjustable spring power, tamper resistant non-critical regulation, separate regulation of general closing speed, and latching speed. Five-year warranty.
 - 2. Size all closers in accordance with the manufacturer's recommendations at the building site.
 - 3. All closer covers shall be a flat, rectangular type of non-ferrous, non-corrosive material, with full cover, painted to match the finish of other door hardware.
 - 4. Closers shall be mounted on the non-corridor side of doors.

PART 3 - EXECUTION

3.1 DELIVERY

- A. Stockpile material sufficiently in advance to assure their availability, and make necessary deliveries in a timely manner for orderly progress of the total work.

SECTION 087100 – DOOR HARDWARE

3.2 COORDINATION

- A. REMOVE existing exit devices & outside trim, cylinders and door closers and turn over to district locksmith to be used for parts. Locksmith has advised that they will use the existing cores in the new hardware. DO NOT DISCARD.
- B. Coordinate as necessary with other trades to assure proper and adequate provisions in the work of those trades for interface with the work of the section.

3.3 FINISH HARDWARE GROUPS

- A. The "Schedule of Finish Hardware" hereinafter included, is assumed to be complete. However, the finish hardware listed herein shall not be construed as a complete hardware schedule and shall only be considered as an indication of the hardware requirements desired by the Architect. It shall be the Contractor's responsibility to examine the drawings and door schedule and provide necessary or additional hardware as required but not scheduled herein. Such items of hardware shall be of the same type, quality and quantity as that scheduled for similar doors, or parts of the building used for similar purposes. Schedule of fabrication and delivery shall be executed to avoid any delay of entire project. The furnishing of hardware is required to fully complete the entire hardware requirements of the job, except for items specifically omitted under "Related Work Specified Elsewhere".
- B. Items of hardware not specifically listed shall conform in class, quality and type of hardware required in like and similar location.
- C. Hardware Set Numbers: All doors shall be equipped with hardware of the types listed and in accordance with the following set numbers. The Contractor is referred to the schedule and plans for the total number of each set required. Sets, as listed herein, shall be supplied as complete units, and must include all components, no omissions will be accepted.

END OF SECTION

SECTION 08800 - GLAZING

PART 1 GENERAL

1.0 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.1 SECTION INCLUDES

- A. Glazing.
- B. Glazing compounds and accessories.

1.2 RELATED SECTIONS

- A. Division 8 Section "Aluminum Windows"
- B. Division 8 Section "Aluminum Curtain Wall"
- C. Division 8 Section "Doors"

1.3 REFERENCES

- A. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test.
- B. ASTM C 864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
- C. ASTM C 1048 - Standard Specification for Heat-Treated Flat Glass--Kind HS, Kind FT Coated and Uncoated Glass.

1.4 SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Samples: For the following products, in the form of 12-inch- (300-mm-) square Samples for glass.
 - 1. Each type of glass and polycarbonate unit specified.
 - 2. Insulating glass with Low E coating and spacer bars specified herein.
 - 3. For each color (except black) of exposed glazing sealant indicated.
- C. Shop Drawing: Provide shop drawing illustrating insulating unit spacer bar layout. Layout to be coordinated with the custom door/window manufacturer to assure that the spacer bar width and layout is coordinated and aligned with the fixed muntins of the custom window/door units.
- D. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.
- E. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.
- F. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

SECTION 08800 - GLAZING

G. Preconstruction Adhesion and Compatibility Test Report: From glazing sealant manufacturer indicating glazing sealants were tested for adhesion to glass and glazing channel substrates and for compatibility with glass and other glazing materials.

H. Product Test Reports: From a qualified testing agency indicating the following products comply with requirements, based on comprehensive testing of current products:

1. Coated float glass.
2. Insulating glass.
3. Glazing sealants.
4. Glazing gaskets.

I. SWRI Validation Certificate: For each elastomeric glazing sealant specified to be validated by SWRI's Sealant Validation Program.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance; and who employs glass installers for this Project who are certified under the National Glass Association Glazier Certification Program as Level 2 (Senior Glaziers) or Level 3 (Master Glaziers).

B. Source Limitations for Clear Glass: Obtain clear float glass from one primary-glass manufacturer.

C. Source Limitations for Insulating Glass: Obtain insulating-glass units from one manufacturer using the same type of glass and other components for each type of unit indicated.

D. Source Limitations for Polycarbonate Glazing: Obtain polycarbonate glazing from one manufacturer.

E. Source Limitations for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.

F. Glass Product Testing: Obtain glass test results for product test reports in "Submittals" Article from a qualified testing agency based on testing glass products.

1. Glass Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.

G. Elastomeric Glazing Sealant Product Testing: Obtain sealant test results for product test reports in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period.

1. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
2. Test elastomeric glazing sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.

SECTION 08800 - GLAZING

3. Test elastomeric glazing sealants according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

H. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.

1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

I. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: GANA'S "Glazing Manual" and "Laminated Glass Design Guide."
2. SIGMA Publications: SIGMA TM-3000"Vertical Glazing Guidelines."

J. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component life of units with appropriate certification label of the following inspecting and testing agency:

1. Insulating Glass Certification Council.
2. Associated Laboratories, Inc.
3. National Accreditation and Management Institute.

K. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not install glazing when ambient temperature is less than 50 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.7 WARRANTY

- A. See Section 01770 - Closeout Procedures, for additional warranty requirements.
- B. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- C. Manufacturer's Special Warranty on Insulating Glass: Written warranty, made out to Owner and signed by insulating-glass manufacturer agreeing to furnish replacements for insulating-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
 1. Warranty Period: 10 years from date of Substantial Completion.

SECTION 08800 - GLAZING

- D. Manufacturer's Special Warranty on "Lexan" Polycarbonate Glazing: Written warranty, made out to Owner and signed by the polycarbonate glazing manufacturer for seven (7) years from Substantial Completion against breakage, coating failure, abrasion resistance, and yellowing and light transmission.

PART 2 PRODUCTS

2.1 TEMPERED (SAFETY) GLASS MATERIALS

- A. Manufacturers: Pilkington LOF.
- B. Tempered (Safety) Glass: Clear; Category II (400 pounds impact), fully tempered with horizontal tempering.
 - 1. Comply with ASTM C 1048, Condition A uncoated, Type 1 transparent flat, Class 1, Quality q3 glazing select.
 - 2. Comply with ANSI Z97.1.
 - 3. 1/4-inch thick.

2.2 POLYCARBONATE GLAZING MATERIALS

- A. Manufacturers: GE Plastics (Cadillac Plastic and Chemical Company) or approved equal.
- B. Polycarbonate Glazing: Lexan MR10 – Clear #112.
 - 1. 1/4-inch thick.

2.2 INSULATED GLASS UNITS

- A. Insulating-Glass Units: Preassembled units consisting of sealed lites of glass separated by an interspace.
- B. Overall Unit Thickness shall be one (1) inch and to consist of the following composition:
 - 1. Pane Number 1 (Exterior): 1/4", fully tempered, Class 1 - clear glass.
 - 2. Pane Number 2 (Interior): 1/4", fully tempered, Class 1 - clear glass with Low E coating on inside face (surface number 3). Low E coating shall be Pilkington LOF Energy Advantage.
 - 3. Interspace: 1/2 inch dehydrated air space.
- C. Sealing System: Dual seal, with primary and secondary sealants as follows:
 - 1. Manufacturer's standard sealants.
- D. Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements:
 - 1. Aluminum with clear-anodized finish.
 - 2. Corner Construction: Manufacturer's standard corner construction.

2.3 OPAQUE INSULATED GLASS UNITS

SECTION 08800 - GLAZING

- A. Insulating-Glass Units: Preassembled units consisting of sealed lites of glass separated by an interspace.
- B. Overall Unit Thickness shall be one (1) inch and to consist of the following composition:
 - 1. Pane Number 1 (Exterior): 1/4", fully tempered, Class 1 - clear glass.
 - 2. Pane Number 2 (Interior): 1/4", fully tempered, Class 1 - frosted glass with Low E coating on inside face (surface number 3). Low E coating shall be Pilkington LOF Energy Advantage – clear color.
 - 3. Interspace: ½ inch dehydrated air space.
- C. Sealing System: Dual seal, with primary and secondary sealants as follows:
 - 1. Manufacturer's standard sealants.
- D. Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements:
 - 1. Aluminum with clear-anodized finish.
 - 2. Corner Construction: Manufacturer's standard corner construction.

2.4 INSULATED VANDALISM GLASS UNITS

- A. Insulating-Glass Units: Preassembled units consisting of sealed lites of glass separated by an interspace.
- B. Overall Unit Thickness shall be one (1) inch and to consist of the following composition:
 - 1. Pane Number 1 (Exterior): 1/4", Polycarbonate sheet.
 - 2. Pane Number 2 (Interior): 1/4", fully tempered, Class 1 - clear glass with Low E coating on inside face (surface number 3). Low E coating shall be Pilkington LOF Energy Advantage – clear color.
 - 3. Interspace: ½ inch.
- C. Sealing System: Dual seal, with primary and secondary sealants as follows:
 - 1. Manufacturer's standard sealants.
- D. Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements:
 - 1. Aluminum with clear-anodized finish.

Corner Construction: Manufacturer's standard corner construction.

2.5 GLAZING ACCESSORIES

- A. General: Provide products of material, size, and shape complying with referenced

SECTION 08800 - GLAZING

glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

- B. Manufacturers:
 - 1. Substitutions: Refer to Section 01600 - Product Requirements.
- C. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C 864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- D. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
- E. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; black color.
- F. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- G. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- H. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine framing glazing, with Installer present, for compliance with the following:
 - 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
 - 2. Presence and functioning of weep system.
 - 3. Minimum required face or edge clearances.
 - 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

SECTION 08800 - GLAZING

- B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where the length plus width is larger than 50 inches (1270 mm) as follows:
 - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 - 2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

- A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- D. Place glazing tape on free perimeter of glazing in same manner described above.
- E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

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- F. Knife trim protruding tape.

3.5 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.6 PROTECTION AND CLEANING

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.

E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

3.7 PROTECTION OF FINISHED WORK

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste.

END OF SECTION 08800

METAL SUSPENSION SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Suspension System Framing and Furring for Plaster and Gypsum Board Assemblies
 - 2. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings.
- B. Related Sections:
 - 1. Section 09250 - Gypsum Board
 - 2. Section 09150 - Acoustical Ceilings
 - 3. Division 15 Sections - Mechanical Work
 - 4. Division 16 Sections - Electrical Work
- C. Alternates
 - 1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products that have not been approved by Addenda, the specified products shall be provided without additional compensation.
 - 2. Submittals, which do not provide adequate data for the product evaluation, will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Furring System component profiles and sizes; Compliance with the referenced standards.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - 2. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
 - 3. ASTM A 1003 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability"
 - 4. ASTM B 117 Standard Practice for Operating Salt Spray (Fog) Apparatus
 - 5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
 - 6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
 - 7. ASTM C 645 Standard Specification for Nonstructural Steel Framing Members
 - 8. ASTM C 754 Installation of Steel Framing Members to Receive Screw-Attached Gypsum Board
 - 9. ASTM C 840 Specification for Application & Finishing of Gypsum Board
 - 10. ASTM C 1858 Standard Practice for Design, Construction, and Material Requirements for Direct Hung Suspended T-bar Type Ceiling Systems Intended to Receive Gypsum Panel Products in Areas Subject to Earthquake Ground Motions
 - 11. ASMT C 1925, Standard Test Method for Strength properties of Direct Hung, Suspended T bar ceilings system intended to receive gypsum board.

12. ASTM C 1002 Standard Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases.
13. ASTM D 610 Standard Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces
14. ASTM E 119 Standard Test Method for Fire Tests of Building Construction and Material (if applicable).
15. ASTM E 3090, Standard Test Method of Metal Ceiling Suspension Systems
16. NOA #07-0119.02 Miami/Dade Wind Uplift.
17. NAO #09-0512.02 Miami/Dade Impact.
18. ESR-1289 ICC-ES Evaluation Report.
19. Cisca Ceiling Systems Installation Handbook
20. (Underwriters Laboratories Inc. (UL) Fire Resistance Directory)

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical literature.
- B. Samples: 8 inch long samples of suspension system components, including main runner, cross tees and angle molding.
- C. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards.

1.5 SUSTAINABLE MATERIALS

- A. Transparency: Manufacturers will be given preference when they provide documentation to support sustainable requirements for the following as applicable: Material ingredient transparency (HPD), Removal of Red List Ingredients per LBCV3 (Declare), Life Cycle impact information (EPD), Low-Emitting Materials (Gold VOC), and Clean Air performance (Gold VOC).
- B.
- C. Please see PART 2 - PRODUCTS for more information.
 1. Health Product Declaration (HPD). The end use product has a published, complete Health Product Declaration with disclosure at a minimum of 1000ppm of known hazards in compliance with the Health Product Declaration Open Standard.
 2. Declare Label. The end use product has a published Declare label by the International Living Future Institute with disclosure of 100 ppm with a designation of Red List Free or Compliant (less than 1% proprietary ingredients).
 3. Low Emitting products with VOC emissions data. Preference will be given to manufacturers that can provide emissions data showing their products meet any of the following: CDPH/EHLB/Standard Method v1.2-2017; Indoor Air Quality Certified to SCS-105 v4.2-2023 [Gold VOC Certificate]
 4. Life cycle analysis. Products that have communicated lifecycle data through Environmental Product Declarations (EPDs) will be preferred.
 5. End of Life Programs/Recycling: Where applicable, manufacturers that provide the option for recycling of their products into new products at end-of-life through take-back programs will be preferred.
 6. Products meeting LEED V4 requirements including:
 - A. Storage & Collection of Recyclables
 - B. Construction and Demolition Waste Management Planning
 - C. Building Life-Cycle Impact Reduction
 - D. Building Product Disclosure and Optimization Environmental Product Declarations
 - E. Building Product Disclosure and Optimization Sourcing of Raw Materials
- B. Building Product Disclosure and Optimization Material Ingredients Construction and Demolition Waste Management

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility: To ensure proper interface, all drywall furring components shall be produced or supplied by a single manufacturer.
- B. All accessory components from other manufacturers shall conform to ASTM standards.
- C. Fire Resistance Ratings: As indicated by reference to design designations in UL Fire Resistance Directory, for types of assemblies in which drywall ceilings function as a fire protective membrane and tested per ASTM E 119. Installation in accordance with the UL Design being referenced.
- D. Coordination of Work:
 - 1. Coordinate drywall furring work with installers of related work including, but not limited to acoustical ceilings, building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.
 - 2. All work above the ceiling line should be completed prior to installing the drywall sheet goods. There should be no materials resting against or wrapped around the suspension system, hanger wires or ties.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

1.7 WARRANTY

- A. Suspensions System: Submit a written limited warranty executed by the manufacturer, agreeing to repair or replace grid components that are supplied with a hot-dipped galvanized coating or aluminum base material. Failures include, but are not limited to:
The occurrence of 50% red rust as defined by ASTM D 610 test procedures as a result of defects in materials or factory workmanship.
- B. Warranty Period:
Grid: Ten years from date of installation.
- C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

Suspension Systems: Armstrong World Industries, Inc. Product: FrameAll, ShortSpan System, SimpleSoffit, Transitions; www.armstrongceilings.com

2.2 SUSPENSION SYSTEMS

- A. Refer to [____] [Section Details] [Reflected Ceiling Plans] [Room Finish Schedule] on drawings for additional ceiling assembly information
- B. FrameAll™ Main Beam:
 - 1. Fire-Rated, Heavy Duty Classification
 - 2. 1-1/2 inch high min, 1-1/2 inch wide flange Knurling on face, 144 inch long
 - 3. Integrated Clip Detail with quick release splice for easy installation and removal
 - 4. Steel 25 ga per ASTM C645 and up to 61% recycled content
 - 5. Rotary Stitched with ScrewStop™ for strength and durability
 - 6. Galvanization coating per ASTM A1003 and ASTM A653
 - 7. Peakform® bulb profile with a reverse hem for easy drywall screw application
 - 8. Compliant with the Build America, Buy America (BABA) Act

9. Must provide documentation to support sustainable requirements for the following:
 - a. Material ingredient transparency (HPD)
 - b. Removal of Red List Ingredients per LBCV3 (Declare)
 - c. Life Cycle impact information (EPD)
 - d. Low-Emitting Materials (Gold VOC)
 - e. Clean Air performance (Gold VOC)
 10. For item numbers: Please consult the FrameAll Data page or your Armstrong representative.
- C. FrameAll™ Cross Tees:
1. Fire-Rated, Heavy Duty Classification
 2. 1-1/2 inch high min, 1-1/2 inch wide flange with Knurled Ridges on face, 48 inch long
 3. Integrated Clip Detail with quick release splice for easy installation and removal
 4. Steel 25 ga per ASTM C645 and up to 61% recycled content
 5. Rotary Stitched and with ScrewStop™ strength and durability
 6. Galvanization coating per ASTM A1003 and ASTM A653
 7. Peakform® bulb profile with a reverse hem for easy drywall screw application
 8. Compliant with the Build America, Buy America (BABA) Act
 9. Must provide documentation to support sustainable requirements for the following:
 - a. Material ingredient transparency (HPD)
 - b. Removal of Red List Ingredients per LBCV3 (Declare)
 - c. Life Cycle impact information (EPD)
 - d. Low-Emitting Materials (Gold VOC)
 - e. Clean Air performance (Gold VOC)
 10. For item numbers: Please consult the FrameAll Data page or your Armstrong representative.
- D. FrameAll™ Wall Molding:
1. Fire-Rated, Heavy Duty Classification
 2. 1-1/4 inch min flange and 25 gauge per ASTM C645 with knurling on face & pre-punched holes in top flange 4" o.c.
 3. Galvanization coating per ASTM A1003 and ASTM A653
 4. Knurled pattern surface with ScrewStop™ reverse hem for strength and durability
 5. For item numbers: Please consult the FrameAll Data page or your Armstrong representative.
- E. SimpleSoffit™ Soffit Framing Main Beam:
1. Fire-Rated, Heavy Duty Classification
 2. 1-1/4 inch high min, 1-1/2 inch wide flange with Knurling on face,
 3. Integrated connection corner detail for accurately achieving 90 bends
 4. Steel 25 ga per ASTM C645 and up to 61% recycled content
 5. Rotary Stitched and with ScrewStop™ strength and durability
 6. Galvanization coating per ASTM A1003 and ASTM A653
 7. Compliant with the Build America, Buy America (BABA) Act
 8. Must provide documentation to support sustainable requirements for the following:
 - a. Material ingredient transparency (HPD)
 - b. Removal of Red List Ingredients per LBCV3 (Declare)
 - c. Life Cycle impact information (EPD)
 - d. Low-Emitting Materials (Gold VOC)
 - e. Clean Air performance (Gold VOC)
 9. For item numbers: Please consult the FrameAll Data page or your Armstrong representative.
- F. FrameAll™ Transition Molding: Drywall to Acoustical ceiling
1. 1-1/4 inch high min, 1-1/2 inch wide flange with Knurling on face,
 2. Pre-Painted Armstrong Global White for Suspension Ceiling color matching.
 3. Drywall taping flange with integral acoustical flange for integrating in Suspension systems.
 4. Steel Thickness 25 ga per ASTM C645
 5. Galvanization coating per ASTM A1003 and ASTM A653
 6. For item numbers: Please consult the FrameAll Data page or your Armstrong representative.
- G. FrameAll™ Clips and Accessories:

1. All Clips confirm to relative testing standards and heavy duty classifications
2. Steel thickness 25 ga per ASTM C645
3. Galvanization coating per ASTM A1003 and ASTM A653
4. For item numbers: Please consult the FrameAll Data page or your Armstrong representative.

H. Miscellaneous:

1. Screws for wallboard application shall be bugle head screws in accordance with thickness of material used.
2. Corner bead: Minimum #26 gauge, zinc alloy or plastic square edge type with expanded flanges.
 - a. Casing bead: Minimum #24 gauge, zinc alloy or plastic square edge type with expanded flanges.
 - b. Control Joints: Minimum #26 gauge, roll-formed zinc alloy, extruded aluminum or plastic with expanded flanges.
 - c. Special Trim Shapes: As detailed on plans, extruded aluminum with acrylic coating by Fry Reglet or approved equal.
 - d. Metal Lath: 3.4 lbs/square yard, galvanized 3/8 inch diamond mesh or flat rib lath; security lath for applications requiring high degree of security.

B. Structural Classification:

1. Main Beam shall be heavy duty per ASTM C 635.
2. Classification can require wires to be closer together for additional loading when used to support double layer gypsum, verticals, slopes, domes, half barrels, circles, soffits, canopies, and step conditions which call for loading or unusual designs and shapes in drywall construction. Using cross tees in the construction of circles, barrels, etc. is common in order to hold the radius.
3. Deflection of fastening suspension system supporting light fixtures, ceiling grilles, access doors, verticals and horizontal loads shall have a maximum deflection of 1/360 of the span.

PART 3 - EXECUTION

3.1 INSTALLATION - GENERAL

- A. Install suspension system and panels in accordance with the manufacturer's instructions, in compliance with ASTM installation standard, and with applicable codes as required by the authorities having jurisdiction.
- B. The FrameAll™ Drywall Grid System can be installed in interior or exterior applications.
- C. To secure to metal clips, concrete inserts, steel bar joist or steel deck, use power actuated fastener, or insert. Coordinate placement for hanger wire spaced as required for expected ceiling loads and layout.
- D. Install hanger wire as required with necessary on center spacing to support expected ceiling load requirements, following local practices, codes and regulations. Provide additional wires at light fixtures, grilles, and access doors where necessary. A pigtail knot shall be used with three tight wraps at top and bottom fastening locations.
- E. Add additional wire as needed when using compatible clips and accessories.
- F. Control Joints: Roll formed zinc alloy, aluminum, or plastic as required for expansion and contraction as shown on drawings.
- G. Expansion Joints: Roll formed zinc alloy, aluminum, or plastic as required for expansion and contraction as shown on drawings.
- H. Main beams shall be suspended from the overhead construction with hanger wire, spaced as required for expected ceiling loads, along the length of the main beams.
- I. Install cross tees at on center spacing as specified by the drywall manufacturer. Typical drywall cross tee spacing:
 1. 16 inches on center with 5/8 or 1/2 inch gypsum board
 2. 24 inches on center with 5/8 inch gypsum board

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- J. Other items such as wood, sheet metal, or plastic panels should be screwed to comply with deflection limit equivalent to that of the ceiling installation.
- K. Use channel molding or angle molding to interface with Drywall Grid System to provide perimeter attachment or to obtain drop soffits, verticals, slopes, etc.
- L. To suspend a second ceiling beneath a new or existing drywall ceiling, without breaching the integrity of the upper ceiling, use the Drywall Clip. To form a transition from a drywall ceiling to an acoustical ceiling, use the Drywall Transition Clips spaced as required for expected loads.
- M. For light fixtures (Type G, Type F) use secondary framing cross tees as required to frame opening.
- N. Single cross tees in a route hole to be secured by 7/16 inch framing screw or alternative methods.

3.2 INSTALLATION - INTERIOR APPLICATIONS

- A. Install main beams and cross tees at the on center spacing required for ceiling loading, and location of in-ceiling services.
- B. Additional bracing as required by code.

3.3 INSTALLATION - RADIUS APPLICATIONS

- A. Determine the bow or camber (Convex or Concave) in a main runner.
- B. Establish a jig or pattern on a flat surface; mark locations to cut main beam; and use four pan head screws to fasten a Radius Clip (RC2) flat to the web between the bulb and the flange, per the manufacturer's instructions.
- C. Install main beams with on center spacing and wire spacing, as needed, to support expected ceiling load.
- D. Additional bracing may be required by code.
- E. Install cross tees at on center spacing as specified by the manufacturer.

END OF SECTION

SECTION 092600 - GYPSUM BOARD ASSEMBLIES

GENERAL

SUMMARY

This Section includes the following:

Interior gypsum wallboard for soffits and walls. Framing/furring as required for proper installation of gyp. board.

SUBMITTALS

Product Data: For each product indicated.

QUALITY ASSURANCE

Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

PRODUCTS

MANUFACTURERS

In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.

Framing:

Steel Studs and Runners: ASTM C 645, in depth indicated.

Minimum Base Metal Thickness: 0.0312 inch.

Deep-Leg Deflection Track: ASTM C 645 top runner with 2-inch- deep flanges.

Proprietary Deflection Track: Steel sheet top runner manufactured to prevent cracking of gypsum board applied to interior partitions resulting from deflection of structure above; in thickness indicated for studs and in width to accommodate depth of studs.

Available Products:

Delta Star, Inc., Superior Metal Trim; Superior Flex Track System (SFT).
Metal-Lite, Inc.; Slotted Track.

SECTION 092600 - GYPSUM BOARD ASSEMBLIES

Resilient Furring Channels: 1/2-inch- deep, steel sheet members designed to reduce sound transmission. Asymmetrical or hat shaped, with face attached to single flange by a slotted leg (web) or attached to two flanges by slotted or expanded metal legs.

Cold-Rolled Furring Channels: 0.0538-inch bare steel thickness, with minimum 1/2-inch- wide flange, and in depth indicated.

Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum bare steel thickness of 0.0312 inch.

Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch-diameter wire, or double strand of 0.0475-inch- diameter wire.

Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum bare metal thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.

PANEL PRODUCTS

Panel Size, General: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.

Proprietary, Special Fire-Resistive Type: ASTM C 36, having improved fire resistance over standard Type X, complying with requirements of fire-resistance-rated assemblies indicated, in thickness indicated, and with long edges tapered.

TRIM ACCESSORIES

Interior Trim: ASTM C 1047.

Cornerbead: Use at outside corners, unless otherwise indicated.

Bullnose Bead: Use where indicated.

LC-Bead: Use at exposed panel edges.

L-Bead: Use where indicated.

U-Bead: Use where indicated.

Expansion (Control) Joint: Use where indicated.

Curved-Edge Cornerbead: With notched or flexible flanges; use at curved openings.

JOINT TREATMENT MATERIALS

General: Comply with ASTM C 475.

Joint Tape:

Interior Gypsum Wallboard: Paper.

Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

SECTION 092600 - GYPSUM BOARD ASSEMBLIES

Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.

Embedding and First Coat: For embedding tape and first coat on joints, flanges of trim accessories, and fasteners, use setting-type taping compound.

Use setting-type compound for installing paper-faced metal trim accessories.

Fill Coat: For second coat, use drying-type, all-purpose compound.

Finish Coat: For third coat, use drying-type, all-purpose compound.

Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.

AUXILIARY MATERIALS

General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

EXECUTION

NON-LOAD-BEARING STEEL FRAMING INSTALLATION

General: Comply with ASTM C 754, and ASTM C 840 requirements that apply to framing installation.

Z-Furring Members: Erect insulation vertically and hold in place with Z-furring members.

Until gypsum board is installed, hold insulation in place with 10-inch staples fabricated from 0.0625-inch- diameter, tie wire and inserted through slot in web of member.

PANEL PRODUCT INSTALLATION

Gypsum Board: Comply with ASTM C 840 and GA-216.

Space screws a maximum of 12 inches o.c. for vertical applications.

Space fasteners in panels that are tile substrates a maximum of 8 inches o.c.

On ceilings, apply gypsum panels before wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

SECTION 092600 - GYPSUM BOARD ASSEMBLIES

Stagger abutting end joints not less than one framing member in alternate courses of board.

At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.

On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.

Single-Layer Fastening Methods: Apply gypsum panels to supports with steel drill screws.

Laminating to Substrate: Comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

Control Joints: Conform to WCB Tech Bulletin Control Joints and GA-234, except as otherwise indicated.

Verify that required double framing is in place before installing control joints. 1. Door and Other Openings: Install control joints at each side of wall opening and at both sides of wall, except alcoves and similar wall configurations.

Continuous Wall Planes: Install control joints floor to ceiling at each 30 lineal foot of wall.

Ceilings: Install across ceiling at each 50 lineal foot distance and each 2500 square foot of ceiling area.

FINISHING

Installing Trim Accessories: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

Finishing Gypsum Board Panels: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration.

Prefill open joints, rounded or beveled edges, and damaged surface areas.

Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.

Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.

Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C 840, for locations indicated:

Level 1: Embed tape at joints in ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistance-rated assemblies and sound-rated assemblies.

Level 2: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges where panels are substrate for acoustical tile.

Level 3: Embed tape and apply separate first and fill coats of joint compound to tape, fasteners, and trim flanges at soffit surfaces only..

SECTION 092600 - GYPSUM BOARD ASSEMBLIES

END OF SECTION

SECTION 095100 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.2 SUMMARY

A. Section Includes:

1. Acoustical ceiling panels.
2. Exposed grid suspension system.
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings.

B. Related Sections:

1. Division 9 - Gypsum Board Assemblies
2. Division 15 Sections - Mechanical Work
3. Division 16 Sections - Electrical Work

C. Alternates

Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products which have not been approved by Addenda, the specified products shall be provided without additional compensation.

Submittals which do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Underwriters' Laboratories Classified Acoustical performance; Panel design, size, composition, color, and finish; Suspension system component profiles and sizes; Compliance with the referenced standards.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A 366 Standard Specification for Steel, Carbon Cold-Rolled Sheet, Commercial Quality.
2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

SECTION 09510 - ACOUSTICAL CEILINGS

6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
7. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
8. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.
9. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems.
10. ASTM E 1264 Classification for Acoustical Ceiling Products.
11. ASTM E 1477 Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
12. ASTM G 21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.
- B. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees.
- C. Shop Drawings: Layout and details of acoustical ceilings. Show locations of items which are to be coordinated with or supported by the ceilings.
- D. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.
- E. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.
- B. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
 1. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.

SECTION 095100 - ACOUSTICAL CEILINGS

- a. Flame Spread: 25 or less
- b. Smoke Developed: 50 or less
- C. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.7 PROJECT CONDITIONS

- A. Space Enclosure:

Standard Ceilings: Do not install interior ceilings until space is enclosed and weather-proof; wet work in place is completed and nominally dry; work above ceilings is complete; and ambient conditions of temperature and humidity are continuously maintained at values near those intended for final occupancy. Building areas to receive ceilings shall be free of construction dust and debris.

HumiGuard Plus Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Products with HumiGuard Plus performance and hot dipped galvanized steel, aluminum or stainless steel suspension systems can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the ceiling.

1.8 WARRANTY

- A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace acoustical panels that fail within the warranty period. Failures include, but are not limited to:
 - 1. Acoustical Panels: Sagging and warping
 - 2. Grid System: Rusting and manufacturer's defects
- B. Warranty Period:
 - 1. Acoustical panels: Ten (10) years from date of substantial completion.
 - 2. Grid: Ten (10) years from date of substantial completion.
- C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run

SECTION 09510 - ACOUSTICAL CEILINGS

concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.9 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.
 - 1. Acoustical Ceiling Units: Furnish quantity of full-size units equal to 5.0 percent of amount installed.
 - 2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A Suspension Systems:
 - 1. Armstrong World Industries, Inc. or approved equal

2.2 ACOUSTICAL TILES : See Schedule on Plans For Panel types and locations.

Products:

Armstrong World Industries, inc. or approved equal

Classification: Fire-resistance-rated tiles, Type III, mineral base with painted finish; Form 2, water felted. (Unless otherwise stated herein)

Pattern: Ultima High NRC (See plans)

Color: White.

LR: Not less than 0.87.

NRC: Not less than 0.85

CAC: Not less than 35.

Fire Rating: Class A

Edge Detail: Tegular

Thickness: 3/4 inch.

Size: 24" x 24".

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Pattern: Armstrong Sahara Scored II (Middle School Media Center)

Color: White.

LR: Not less than 0.81.

NRC: 0.90

Fire Rating: Class A

Edge Detail: Square

Thickness: 1 inch.

Size: 24" x 48".

2.3 METAL SUSPENSION SYSTEM

Available Products:

Armstrong Silhouette XL 1/8" Reveal, 9/16" Slotted Tee Grid System

Fire-Rated Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation, with prefinished 15/16-inch-wide metal caps on flanges.

Structural Classification: Heavy-duty system.

End Condition of Cross Runners: Butt-edge type.

Cap Material: Steel cold-rolled sheet.

Cap Finish: Painted white.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not proceed with installation until all wet work such as painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.
- B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

SECTION 09510 - ACOUSTICAL CEILINGS

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.3 INSTALLATION

- A. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.
- B. Suspend main beam from overhead construction with hanger wires spaced 4'-0" on center along the length of the main runner. Install hanger wires plumb and straight.
- C. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.
- D. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.
- E. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.
- F. Install acoustic panels direct to decking using #1221 self-stopping fasteners. Fasteners to match panel color for each location. Panel to extend from edge of chord to edge of chord or adjacent wall.

3.4 ADJUSTING AND CLEANING

- A. Replace damaged and broken panels.
- B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09510

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

GENERAL

RELATED DOCUMENTS

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

SUMMARY

Section Includes:

Resilient base.

SUBMITTALS

Samples for Initial Selection: For each type of product indicated.

QUALITY ASSURANCE

Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

DELIVERY, STORAGE, AND HANDLING

Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F or more than 90 deg F.

PROJECT CONDITIONS

Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive resilient products during the following time periods:

48 hours before installation.
During installation.
48 hours after installation.

Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

Install resilient products after other finishing operations, including painting, have been completed.

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

EXTRA MATERIALS

Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

PRODUCTS

RESILIENT BASE B-1

Resilient Base:

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Johnsonite.
Roppe Corporation, USA.
Armstrong World Industries, Inc.

Resilient Base Standard: ASTM F 1861.

Material Requirement: Type TV (vinyl, thermoplastic).
Manufacturing Method: Group I (solid, homogeneous).
Style: Cove (base with toe).

Minimum Thickness: 0.080 inch.

Height: 6 inches or to match existing, verify in field.

Lengths: Cut lengths, 48 inches long.

Outside Corners: Preformed.

Inside Corners: Preformed.

Finish: Satin.

Colors and Patterns: As selected by Owner from full range of industry colors. Where new work abuts old work, intent is to match existing.

INSTALLATION MATERIALS

Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

Use adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

Cove Base Adhesives: Not more than 50 g/L.

Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of tiles, and in maximum available lengths to minimize running joints.

Floor Polish: Provide protective liquid floor polish products as recommended by resilient stair tread manufacturer.

EXECUTION

EXAMINATION

Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

Proceed with installation only after unsatisfactory conditions have been corrected.

PREPARATION

Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

Do not install resilient products until they are same temperature as the space where they are to be installed.

Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

RESILIENT BASE INSTALLATION

Comply with manufacturer's written instructions for installing resilient base.

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

Do not stretch resilient base during installation.

On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

Preformed Corners: Install preformed corners before installing straight pieces.

CLEANING AND PROTECTION

Comply with manufacturer's written instructions for cleaning and protection of resilient products.

Perform the following operations immediately after completing resilient product installation:

- Remove adhesive and other blemishes from exposed surfaces.
- Sweep and vacuum surfaces thoroughly.
- Damp-mop surfaces to remove marks and soil.

Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

Floor Polish: Remove soil, visible adhesive, and surface blemishes from resilient stair treads before applying liquid floor polish.

- Apply one coat(s).

Cover resilient products until Substantial Completion.

END OF SECTION 096513

SECTION 096519 – RESILIENT TILE FLOORING

PART 1 – GENERAL

1. SUBMITTALS
 - a. Product Specification
 - b. Specification for Adhesive
 - c. Floor Layouts
 - d. Samples
 - e. Schedule
 - f. Qualifications for Installer
2. CLOSEOUT SUBMITTALS
 - a. Maintenance Instructions
 - b. Warranty
3. QUALITY ASSURANCE
 - a. Environmental: FloorScore® Certified
 - b. Installer Qualifications: Installer who has been trained in the installation of resilient sheet flooring.
 - c. Mockups: Install 100 sf of product at designated location for architect review and approval.
4. MATERIAL STORAGE AND HANDLING
 - a. Store tiles on a flat surface and squarely on top of one another.
 - b. Store away from vents and direct sunlight.
 - c. When palletizing, first place a 5/8" or thicker plywood on the pallet. Stack 2 rows high side by side with no airspace between. Then quarter turn for 2 rows side by side. Do not exceed 12 boxes high. If you are stacking pallets, use a 1" thick plywood in between pallets.
 - d. Store in protected dry conditions between 65 and 85 degrees.
5. SITE CONDITIONS
 - a. The permanent HVAC system must be on for 7 days prior to, during and after installation between 65 and 85 degrees Fahrenheit or 18 to 29 degrees Celsius.
 - b. Material and adhesive must be acclimated to the installation area for a minimum of 48 hours prior to installation.

PART 2 – PRODUCTS

1. TESTING REQUIREMENTS
 - a. Slip Resistance ASTM D2047: ADA Compliant
 - b. Static Load Limit ASTM F970: 1500 psi
 - c. Residual Indentation F1914: passes, 8%
 - d. Flexibility ASTM F137: Passes
 - e. Resistance to Heat ASTM F1514: Passes
 - f. Resistance to Light ASTM F1515: Passes
 - g. Resistance to Chemicals ASTM F925: Passes
 - h. Radiant Flux ASTM E648: / 0.45 W/sq. cm., Class I
 - i. Smoke Density ASTM E662: Passes, <450
2. RESILIENT TILE
 - a. Manufacturer: Patcraft

SECTION 096519 – RESILIENT TILE FLOORING

- b. Product: CMYK, I426V
 - c. Construction: High Performance Luxury Vinyl Plank
 - d. Class ASTM F1700: Class III Printed Film Vinyl Plank
 - e. Wear-layer Thickness: 20 mil (0.20 inches/.5 mm)
 - f. Overall Thickness: 0.98 (2.5 mm)
 - g. Nominal Dimensions: 12 inches W x 24 inches L (30.48 cm x 60.96 cm)
 - h. Finish: ExoGuard+™
 - i. Backing Class: Commercial Grade
 - j. Installation: Glue
3. INSTALLATION MATERIALS
- a. Adhesives:
 - i. Shaw 4100 spreadable 95% RH 8 lbs pH 10
 - ii. S150 spray 95% RH NA pH 11
 - iii. Shaw 4151 for high moisture 99% RH 10 lbs. pH 12
 - iv. Shaw 200 for low demand areas 85% RH 5 lbs pH 5-9
 - b. Weld Rod
 - i. Heat
 - ii. Chemical
 - c. Primer: Shaw 9050
 - d. Leveling and Patching Compounds: Use only Portland-based patching and leveling compounds. Do not install resilient flooring over gypsum-based patching and/or leveling compounds.
 - e. Take Abatement Coating: Shaw 6200
 - f. Barrier Coat Floor Encapsulation: Shaw 9000
 - g. Cove Base Accessories: As specified
 - h. Floor Polish

PART 3 – EXECUTION

4. EXAMINATION

- a. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content, pH, smoothness and level.
- b. Proceed with installation after any unsatisfactory conditions have been corrected.

5. PREPARATION

- a. Concrete substrates should be tested for Internal Relative Humidity according to ASTM F 2170 and must not exceed 90% RH.
- b. The PH of the concrete sub-floor must be between 7 and 10.
- c. Substrates shall be smooth, structurally sound, permanently dry, clean and free of all foreign material such as dust, wax, solvents, paint, grease, oils, old adhesive residue, curing and hardening/ curing compounds, sealers and other foreign material that might prevent adhesive bond.
- d. Concrete floors shall be flat, level and smooth.
- e. Provide self-leveling of substrate prior to initiating flooring installation.

6. INSTALLATION

- a. LAYOUT AND INSTALLATION

SECTION 096519 – RESILIENT TILE FLOORING

- b. See plans for locations and layout.
- c. Install using conventional tile and plank installation techniques. Plank products should have a minimum of 6 to 8" seam stagger.
- d. Center rooms and hallways so borders are not less than half of a tile or plank.
- e. Work out of multiple boxes at the same time.
- f. In hallways and small spaces, work lengthwise from one end.
- g. Ensure cut edges are always against the wall.
- h. To cut products, score the top side of the material with a utility knife. Bend the product and finish the cut through the back side. It may be necessary to use a heat gun to cut around vertical obstructions. Allow the heated product to return to room temperature before installation.
- i. If you cut the product into a fine point, it may delaminate. Use an ethyl cyanoacrylate-based super glue to fuse the points together. Clean all glue from the top surface immediately. Alcohol-based super glues may cause the vinyl to swell.
- j. Roll the plank or tile with a 3-section 100 lb. roller. Re-roll the floor within the working time of the adhesive. Continue to roll the floor throughout the working day to ensure a proper bond.
- k. Use floor protection after installation. DO NOT use a plastic adhesive-based protection system.

7. MAINTENANCE

- a. Initial Maintenance
 - i. Sweep, vacuum or dust mop to remove dirt and grit.
 - ii. If needed, add neutral cleaner to cool water following the manufacturer's instructions.
 - iii. Scrub with a low-rpm machine or auto scrubber. Use a red pad or brush.
 - iv. Never use brown or black pads (too aggressive and can damage the product)
 - v. Remove the cleaning solution with a wet-dry vacuum or auto scrubber until the floor is dry.
 - vi. Rinse the floor with clean water. Repeat the rinse process if necessary to remove all haze.
- b. Routine Maintenance
 - i. Sweep, vacuum or dust mop to remove dirt and grit.
 - ii. Add neutral pH cleaner to cool water following the manufacturer's instructions.
 - iii. As needed, scrub with a low-rpm machine or auto scrubber to retain appearance. Use a red (light scrubbing) pad and neutral cleaner following the manufacturer's instructions.
- c. Preventative Floor Care
 - i. Use walk-off mats that are as wide as the doorway and long enough for soil load and weather conditions.
 - ii. Use mats with a non-staining backing.
 - iii. Floor protectors should be used on all furniture legs.
 - iv. The surface area of the floor protectors should be no less than 1" in diameter.

SECTION 096519 – RESILIENT TILE FLOORING

- d. Full maintenance instructions will be provided by the manufacturer.
- 8. EXTRA MATERIALS (ATTIC STOCK)
 - a. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage with labels describing contents.
 - b. Quantity: Furnish the Owner with an additional 3% of each color and type used on project in sealed cartons.

END OF SECTION 096519

SECTION 096813 – TILE CARPETING

PART 1 – GENERAL

1. RELATED DOCUMENTS

- a. Division 01 Specification Sections

2. SUMMARY

- a. This section relates to carpet tile.

3. PREINSTALLATION MEETINGS

- a. Conducted in accordance with Division 1 Specifications.

4. SUBMITTALS

- a. Product Specification
- b. Specification for Adhesive
- c. Shop Drawings
- d. Samples – Full Size
- e. Schedule
- f. Qualifications for Installer

5. CLOSEOUT SUBMITTALS

- a. Maintenance Instructions
- b. Warranty Documents

6. QUALITY ASSURANCE

- a. Environmental:
 - i. Green Label Plus Certified
 - ii. Cradle to Cradle Certified Gold
 - iii. NSF 140 Gold
 - iv. Health Product Declaration
 - v. Declare Label, red list compliant
 - vi. No PVC components
- b. Installer Qualifications: Installer who has been trained in the installation of carpet tile.
- c. Manufacturer Qualifications
 - i. ISO 14001
 - ii. ISO 9001
 - iii. Reclamation Program: Will recycle EcoWorx carpet tile free of charge for quantities of 500 SY (418 SM) or more within continental United States and Canada or 5000 SY (4180 SM) globally.
- d. Mockups at designated location for architect review and approval.

7. MATERIAL STORAGE AND HANDLING

- a. Store rolls on a flat surface, away from vents and direct sunlight.

SECTION 096813 – TILE CARPETING

- b. Store in protected dry conditions between 65 and 85 degrees.

8. SITE CONDITIONS

The following conditions must be maintained for 24 hours prior to, during and permanently after installation:

- a. HVAC System must be operational.
- b. The installation site, carpet and adhesive must be between 50°F and 95°F.
- c. The installation site's ambient relative humidity must not fall below 40%.
- d. Conduct relative humidity or Anhydrous Calcium Chloride testing. Results must be within the proper range for Shaw 5000 adhesive:
 - i. Calcium Chloride ASTM F-1869 5.0 lbs per 1000 SF /24 hours
 - ii. Relative Humidity ASTM F-2170 85%
 - iii. EcoLogix ES does not require moisture or pH testing.
- e. Conduct pH testing on the floor in several locations. A reading below 5.0 or above 9.0 requires corrective measures.

PART 2 – PRODUCTS

1. TESTING REQUIREMENTS

- a. Pill Test CPSC FF 1 70: Pass
- b. Radiant Panel ASTM E648: Class I
- c. NBS smoke ASTM E662 NF: <450
- d. Flame Spread: 0-25
- e. Static AATCC 134: <3.5 kv
- f. Critical Radiant Flux Not less than .45 watts/cm2
- g. Coefficient of Friction: 0.6 (Meets ADA requirements)

2. TILE CARPETING

- a. Manufacturer: Patcraft, or approved equal
- b. Product: Realize, I0489
- c. Construction: MULTI-LEVEL PATTERN LOOP
- d. Fiber: Solution Q Extreme® Nylon
- e. Dye Method: 100% Solution Dyed
- f. Backing: EcoWorx® Tile
- g. Size: 24" x 24"
- h. Gauge: 1/12
- i. Stitches: 10
- j. Finished Pile Thickness: 0.107
- k. Average Density: 6,393

SECTION 096813 – TILE CARPETING

- l. Total Thickness: 0.232
 - m. Tufted Weight: 19.0 oz
- 3. INSTALLATION MATERIALS
 - a. Acceptable Adhesives:
 - i. For EcoWorx (fiberglass reinforced):
 - 1. Shaw 5000 pressure sensitive: 5 lbs. 85% RH pH 5-9
 - 2. Shaw 5100 pressure sensitive: 5 lbs. 85% RH pH 5-9
 - 3. Shaw 5036 with antimicrobial: 5 lbs. 85% RH pH 5-9
 - 4. Shaw 5800 for high moisture: 10 lbs. 95% RH pH 10
 - 5. Shaw 3800 indoor/outdoor 8 lbs. 90% RH pH 5-9
 - 6. LokDots dry adhesive: No visible moisture pH 12
 - 7. LokWorx tabs: 10 lbs. 85 RH pH 12
 - 8. Mill-applied ES: No visible moisture
 - b. Primer (if needed): 9050 is an acrylic solution made to neutralize excess alkali that is also recommend as a primer coat to prevent over absorption of adhesive and to ensure a better bond. Formulated with an antimicrobial agent, it provides protection against bacteria, fungi, and mildew in the wet or dry state. Contains no solvent, alcohol, or other hazardous materials per OSHA 29 CFR 1910.1200. Non-photo chemically reactive per rule #102. Available in 4-gallon pails.
 - c. Leveling and Patching Compounds: Use a cementitious patching/leveling compound that meets or exceeds the required moisture level and pH requirements. Use of gypsum-based patching and/or leveling compounds which contain Portland or high alumina cement and meet or exceed the compressive strength of 3,000 psi are acceptable.
 - d. Transition Strips – Use where required by Architect. Submit samples for approval.
 - e. Cove Base Accessories: See Section 096513 Resilient Base

PART 3 – EXECUTION

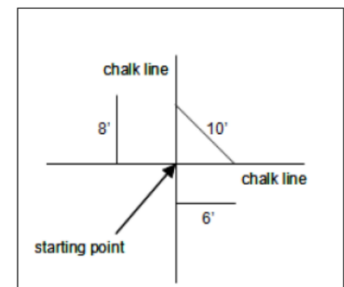
- 1. EXAMINATION
 - a. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content, pH, smoothness and level.
 - b. If dusting or powdering exists, seal the floor with a latex primer such as Shaw 9050.
- 2. PREPARATION
 - a. Substrates shall be smooth, structurally sound, permanently dry, clean and free of all foreign material such as dust, wax, solvents, paint, grease, oils, old adhesive residue, curing and hardening/ curing compounds, sealers and other foreign material that might prevent adhesive bond.
 - b. Pre-existing Adhesive

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- i. Non-Active Multipurpose Adhesive: Remove ridges, sweep or vacuum debris.
 - ii. Active Multipurpose Adhesive: Remove ridges then eliminate the adhesive tack with a product such as Shaw 6200.
 - iii. Pressure Sensitive Adhesive Affected by Plasticizer Migration: If the previous carpet tile had a PVC backing and the plasticizer in the backing has transferred to the adhesive, you must thoroughly remove adhesive by wet scrapping.
 - iv. Existing Pressure Sensitive Adhesive: Evaluate the tack level of the existing adhesive. If sufficient, the existing adhesive can be used to install Shaw's tile products. If insufficient, apply new adhesive over existing adhesive.
 - v. Active Cutback Adhesive: Wet scrape adhesive, reduce to a well-bonded residue and encapsulate with a product such as Shaw 9000.
 - vi. Non-active Cutback Adhesive: Wet scrape adhesive and reduce to a well-bonded residue.
- c. Fill depressions or cracks with a cementitious patching/leveling compound that meets or exceeds the required moisture level and pH requirements. Use of gypsum-based patching and/or leveling compounds which contain Portland or high alumina cement and meet or exceed the compressive strength of 3,000 psi are acceptable.
- d. Flooring considerations:
- i. Installing over VCT and VAT: Tiles must be secure to the subfloor. Strip any wax from the surface.
 - ii. Installing over wood subfloors: Prime with a liquid latex such as Shaw 9050.
 - iii. Installing over raised access flooring: Must be smooth, level, secure and clean. Install carpet tile at an offset from panel seams. Gaps must not exceed 1/16" (1.6 mm).

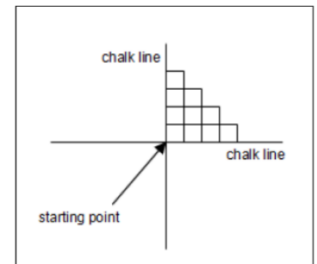
3. LAYOUT AND INSTALLATION

- a. Start the tile installation as near to the center of the room as possible and position it to use the largest perimeter cut tile size.
- b. Snap a chalk line parallel to one major wall bisecting the starting point. It may be necessary to offset the center chalk line to assure perimeter tiles will be at least half size.
- c. Snap a second chalk line from the starting point at 90° to the first line. Use a 3-4-5, 6-8-10, or larger triangle depending on the room size. Meters or feet may be used to lay out the triangle in these proportions.



SECTION 096813 – TILE CARPETING

- d. Use a full spread of adhesive applied with a 3/8" foam paint roller or 1/16 x 1/32 x 5/64 u-notch trowel. The adhesive must be allowed to dry completely before installing the carpet. Installing into wet adhesive will result into a permanent bond and may cause the carpet to bubble. Trowel application of adhesive is recommended for EcoLogix. EcoWorx ES / EcoLogix ES no adhesive required. Approximate coverage rates are 35-40 yards per gallon when applied with a roller, and 28 -33* yards per gallon when applied with a trowel.
- e. Install each full carton and complete an entire pallet before starting another pallet to minimize product variation. Each tile has directional arrows on the back. These arrows allow for one-directional or multi-directional installation. Some styles may be large scale or linear in design and require quarter turning. If you are unsure about whether or not your product requires a quarter turned installation, please contact 1.877.502.7429. Numbers within the arrows are for manufacturing purposes and are not related to installation.
- f. Begin installation at the intersection of two chalk lines. Continue until you complete one quadrant. Proceed to an adjoining quadrant until all four quadrants are completed. Larger areas may require chalk lines bisecting the original four quadrants.
- g. Install tiles using the pyramid technique. This gives you multiple alignment checks. If the edges do not align and the misalignment increases with progression of the installation, find and correct the source of the problem.
- h. Carpet tiles come in various sizes. All Shaw tiles have directional arrows on the back of the tile. Slide tiles into position to prevent yarn from being trapped between the tiles. Trapped yarn will adversely affect the appearance of the installation and will cause alignment problems.
- i. EcoWorx ES /EcoLogix ES are manufactured with the adhesive already applied. Once the tile is ready to install, simply peel the liner from the back and position snugly to the adjacent tile.
- j. Tiles must fit snugly, but not be compressed. Press the entire surface of the tile to ensure adhesion. Check for fit by measuring the length of ten full tiles after installation. The measurement must not be less than, or exceed by more than 1/4 inch, the length of the tiles being multiplied by ten. For example: if 24" X 24" tiles are being installed, the measurement should be between 240 and 240 1/4 inches.
- k. Measure and cut tiles from the back using a straight edge. Be sure the arrows are pointing in the correct direction.
- l. Roll the entire installation with a 75 lb. or greater roller to assure the proper adhesion to the substrate.



4. MAINTENANCE

- a. Post-installation Care

SECTION 096813 – TILE CARPETING

- i. Place plywood over the carpet when heavy objects will be moved within 24 hours after installation.
- b. Preventative Floor Care
 - i. Use protective chair mats under chairs with casters.
 - ii. Use soil removal mats at exterior entrances.
 - iii. Use absorbent mats in areas where moisture, oil and grease are present.
- c. Routine Maintenance
 - i. Set a schedule depending on traffic and vacuum regularly.
 - ii. Remove spots with spot removers as soon as they occur.
 - iii. Use encapsulation agents periodically.
 - iv. Clean with hot water extraction periodically.

Traffic Level	Vacuum	Spot Removal	Interim Cleaning	Hot Water Extraction
Light	2/week	As needed	As needed	1/year
Moderate	1/day	As needed	As needed	1/year
Heavy	1/day	As needed	Monthly	4/year
Extra Heavy	1/day	As needed	Weekly	Monthly

END OF SECTION 096813

SECTION 098300 - ACOUSTIC FINISHES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Acoustic Coverings.

1.02 REFERENCE STANDARDS

- A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2023.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- C. ASTM E795 - Standard Practices for Mounting Test Specimens during Sound Absorption Tests; 2023.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets for products specified.
- C. Samples: Submit two samples 12 by 12 inch in size indicating colors for selection.
- D. Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- F. Manufacturer's qualification statement.
- G. Installer's qualification statement.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing work of type specified in this section, and with at least three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Store and handle materials according to manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not apply acoustical finishes when surface and ambient temperatures are outside the temperature ranges required by manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Wall Coverings:
 - 1. acoufelt.
 - 2. CSI Creative.
 - 3. Substitutions: See Section 016000 - Product Requirements.

SECTION 098300 - ACOUSTIC FINISHES

2.02 ACOUSTIC COVERINGS

- A. General:
 - 1. Provide materials compatible with one another and substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Description: Solution-dyed, recycled polyester with fused latex backing.
 - 1. Noise Reduction Coefficient (NRC) of not less than 0.95
 - 2. Surface Burning Characteristics: Flame spread index of 15, maximum; smoke developed index of 200, maximum; when tested in accordance with ASTM E84.
 - 3. Color: As selected from manufacturer's full range.
 - 4. Adhesive: Type recommended by wall covering manufacturer to suit application.

2.03 ACCESSORIES

- A. Materials: Provide primers, sealers, cleaning agents, and clean up materials as required for completion of acoustic finish.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of acoustic finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

3.02 PREPARATION

- A. Protect adjacent surfaces and materials not receiving coating from splatter and overspray.
- B. Mask surface appurtenances including, but not limited to, exit signs, fire sprinkler escutcheons, HVAC grilles, light fixtures, and speaker grilles.
- C. Replace damaged ceiling materials.
- D. Prepare surfaces using cleaning methods recommended by the manufacturer.
- E. Seal surfaces that may cause bleed through or staining of acoustic finish.
- F. Seal surfaces that may cause bleed through or staining of wall covering.

3.03 APPLICATION

- A. Apply in accordance with manufacturer's written instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Reinstall surface appurtenances removed prior to finishing.
- E. Acoustic Coverings:
 - 1. Apply premixed adhesive directly to wall.
 - 2. Cut material to desired length and along vertical edge of ribbed pattern. Install in vertical strips, edges butted.

SECTION 098300 - ACOUSTIC FINISHES

3. Apply wall covering smooth, without wrinkles, gaps, or overlaps. Eliminate air pockets and ensure full bond to substrate surface.
4. Avoid seams within 6 inches of corners.

3.04 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.

3.05 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Remove masking and covering and residue left from masking.

3.06 PROTECTION

- A. Protect finishes from subsequent construction operations.
- B. Touch-up damaged finishes.

END OF SECTION 098300

SECTION 099123 - INTERIOR PAINTING

GENERAL

RELATED DOCUMENTS

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

SUMMARY

This Section includes surface preparation and the application of paint systems on the following interior substrates:

Gypsum Wall Board

SUBMITTALS

Samples for Initial Selection: For each type of topcoat product indicated. Owner to select colors from manufacturer's full range of colors.

QUALITY ASSURANCE

MPI Standards:

Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."

Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

DELIVERY, STORAGE, AND HANDLING

Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

Maintain containers in clean condition, free of foreign materials and residue.
Remove rags and waste from storage areas daily.

PROJECT CONDITIONS

Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

EXTRA MATERIALS

SECTION 099123 - INTERIOR PAINTING

Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PRODUCTS

MANUFACTURERS

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Benjamin Moore & Co.
Sherwin-Williams Company (The).

PAINT, GENERAL

Material Compatibility:

Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

Chemical Components of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions; these requirements do not apply to primers or finishes that are applied in a fabrication or finishing shop:

Flat Paints and Coatings: VOC content of not more than 50 g/L.

Nonflat Paints and Coatings: VOC content of not more than 150 g/L.

Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).

Restricted Components: Paints and coatings shall not contain any of the following:

Acrolein.
Acrylonitrile.
Antimony.
Benzene.
Butyl benzyl phthalate.
Cadmium.
Di (2-ethylhexyl) phthalate.
Di-n-butyl phthalate.
Di-n-octyl phthalate.

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1,2-dichlorobenzene.
Diethyl phthalate.
Dimethyl phthalate.
Ethylbenzene.
Formaldehyde.
Hexavalent chromium.
Isophorone.
Lead.
Mercury.
Methyl ethyl ketone.
Methyl isobutyl ketone.
Methylene chloride.
Naphthalene.
Toluene (methylbenzene).
1,1,1-trichloroethane.
Vinyl chloride.

Colors: As selected by Architect from manufacturer's full range.

PRIMERS/SEALERS

Interior Latex Primer/Sealer: MPI #50.

VOC Content: E Range of E1.

Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint systems indicated.

LATEX PAINTS

Institutional Low-Odor/VOC Latex (Semigloss): MPI #147 (Gloss Level 5). Note: In Kitchens and food prep areas, use Gloss finish)

VOC Content: E Range of E3.

Environmental Performance Rating: EPR 3.

EXECUTION

EXAMINATION

Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.

Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

Concrete: 12 percent.

Masonry (Clay and CMU): 12 percent.

SECTION 099123 - INTERIOR PAINTING

Wood: 15 percent.
Gypsum Board: 12 percent.
Plaster: 12 percent.

Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

PREPARATION

Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

Contractor to wire brush and prepare all existing painted CMU prior to applying new paint finish. Preparation shall be as required to prevent new paint from delaminating from the walls.

Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

Plaster Substrates: Do not begin paint application until plaster is fully cured and dry.

APPLICATION

Apply paints according to manufacturer's written instructions.

Use applicators and techniques suited for paint and substrate indicated.
Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

SECTION 099123 - INTERIOR PAINTING

Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

Painting Mechanical and Electrical Work: Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:

Mechanical Work:

- Uninsulated metal piping.
- Uninsulated plastic piping.
- Pipe hangers and supports.
- Tanks that do not have factory-applied final finishes.
- Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
- Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
- Mechanical equipment that is indicated to have a factory-primed finish for field painting.

Electrical Work:

- Switchgear.
- Panelboards.
- Electrical equipment that is indicated to have a factory-primed finish for field painting.

FIELD QUALITY CONTROL

Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:

Owner will engage the services of a qualified testing agency to sample paint materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.

Testing agency will perform tests for compliance with product requirements.

Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying-paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

SECTION 099123 - INTERIOR PAINTING

CLEANING AND PROTECTION

At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

INTERIOR PAINTING SCHEDULE

Gypsum Board Substrates:

Institutional Low-Odor/VOC Latex System: MPI INT 9.2M.

Prime Coat: Interior latex primer/sealer.

Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.

Topcoat: Institutional low-odor/VOC interior latex (semigloss).

END OF SECTION

SECTION 104410 - PLASTIC SIGNS

PART 1 - GENERAL

1.1 SECTION INCLUDES

Engraved plastic signs to be mounted on all room doors, complying with ADA requirements where applicable.

1.2 RELATED SECTIONS

- A. Section 08110 – Steel Door Frames.
- B. Section 08211 – Flush Wood Doors.
- C. Section 09900 - Painting.

1.3 SUBMITTALS

- A. Submit shop drawings listing sign styles, lettering and locations, and overall dimensions of each engraved sign.
- B. Submit two samples illustrating full size sample sign of type, style, and color chart, including method of attachment.
- C. Include installation template.

1.4 DELIVERY, STORAGE, AND HANDLING

Package signs, labeled in name groups.

1.5 ENVIRONMENTAL REQUIREMENTS

Do not install signs when ambient temperature is below 70° F (21° C). Maintain this minimum during and after installation of signs.

PART 2 - PRODUCTS

2.1 MANUFACTURER

Provide products from Mohawk Sign Systems, Inc., P.O. Box 966, Schenectady, NY 12301-0966. 518/ 370-3433 or FAX 518/ 370-3332 or approved equal.

2.2 GRAPHIC PROCESS

- A. All signs shall be manufactured using Graphic Process Series 200A - Sand Carved using Format D.
 - 1. Tactile characters shall be raised the required 1/32" inches from sign face. Glue-on letters or etched backgrounds are not acceptable.
 - 2. All text shall be accompanied by Grade 2 Braille. Braille shall be separated 2" from the corresponding raised characters or symbols. Grade 2 Braille translation to be provided by signage manufacturer.
 - 3. All letters, numbers and/or symbols shall contrast with their background, either light characters on a dark background or dark characters on a light background. Characters and background shall have a non-glare finish.
- B. Plaque material shall be Class A per ASTM E-84, NFPA-225, UL-793 ES (Engraving Stock) plastic laminate, approximately 1/8" thick with contrasting core color. The ES plastic shall be non-static, fire-retardant, and self-extinguishing. The plastic

SECTION 104410 - PLASTIC SIGNS

laminate will be impervious to most acids, alkalies, alcohol, solvents, abrasives, and boiling water.@

- C. Letterform shall be Gill Sans upper case or other sans serif or simple serif letterforms.
- D. Size of letters and numbers shall be as follows:
 - 1. Lettering for room ID signs shall be 3/4".
 - 2. Symbol size shall be 4".
 - 3. Standard Grade 2 Braille shall be 2" below copy.
- E. Copy position: CC (centered/centered).

2.3 SIGN SIZE

- A. Restroom signs shall be design ADA-3 size 9" x 8" with a 4" accessibility symbol, gender symbol, and the verbal description placed directly below followed by Grade 2 Braille.
- B. Corners: 2" radius (optional)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive work.
- B. Beginning of installation means installer accepts existing surfaces.

3.2 INSTALLATION

Signs shall be mounted using torx head screws for interior signs. The signs shall be mounted 60" from the floor to the center of the sign on the latch side. The distance between the door frame and sign should be 2'. Installer/user assumes responsibility for suitable installation of the signs. Signs to be located as shown on the drawings.

END OF SECTION

SECTION 122400 MOTORIZED WINDOW SHADES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Motorized, roll-up fabric interior window shades including motor operator, controls, and mounting hardware.

1.2 RELATED SECTIONS

- A. Division 6– Rough Carpentry: Blocking for support of window shade hardware.
- B. Division 7 - Joint Sealers: Sealants for perimeter of shade system.
- C. Division 16 - Electrical: Electrical supply, conduit, and wiring for motorized window shades.

1.3 REFERENCES

- A. NFPA 70 - National Electrical Code.
- B. NFPA 701-99 - Fire Tests for Flame-Resistant Textiles and Films.
- C. UL GREENGUARD Gold.
- D. US Green Building Council.
- E. ANSI/WCMA A100.1-2018

1.4 SUBMITTALS

- A. Submit under provisions of Section 013300 - Submittal Procedures:
- B. Product Data: Manufacturer's data sheets on each product specified, including:
 - 1. Preparation instructions and recommendations.
 - 2. Installation and maintenance instructions.
 - 3. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
 - 4. Storage and handling requirements and recommendations.
 - 5. Mounting details and installation methods.
 - 6. Typical wiring diagrams including integration of motor controllers with building management system, audiovisual and lighting control systems as applicable.
- C. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams and relationship to adjacent work.

SECTION 122400 MOTORIZED WINDOW SHADES

- D. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings, field verified window dimensions, quantities, type of shade, controls, fabric, and color, and include opening sizes and key to typical mounting details.
- E. Selection Samples: For each finish product specified, one complete set of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns.
- F. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shade fabric sample and aluminum finish sample as selected, representing actual product, color, and patterns. Mark face of material to indicate interior faces.
- G. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.
- H. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- I. Standard manufacturer's defect warranty: Standard manufacturer's warranty documents indicating compliance with requirements of Section 1.9 below.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain roller shades through one source from a single manufacturer with a minimum of twenty years experience in manufacturing products comparable to those specified in this section. If manufacturer does not meet minimum experience requirement please submit life cycle test data showing minimum 2000 complete operational cycles for each year of warranty showing no failure and that shade remains fit for use as a operable shade).
- B. NFPA Flame-Test: Passes NFPA 701. Materials tested shall be identical to products proposed for use. Show complete manufacturer data (name,location,contact) and certification from manufacturer that the fabrics sourced for this project comply with the test data provided.
- C. Shading system shall be UL listed. Provide documentation and proper labeling.
- D. Mock-Up: Provide a mock-up of one of each type roller shade assembly specified for evaluation of mounting, appearance and accessories.
 - 1. Locate mock-up in window(s) designated by Architect.
 - 2. Do not proceed with remaining work until mock-up is accepted by Architect.

SECTION 122400 MOTORIZED WINDOW SHADES

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver window shades until building is enclosed and construction within spaces where shades will be installed is substantially complete.
- B. Deliver products in manufacturer's original, unopened, undamaged containers with labels intact.
- C. Label containers and shades according to Window Shade Schedule.
- D. Store products in manufacturer's unopened packaging until ready for installation.

1.7 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.8 PROJECT CONDITIONS

- A. Install roller shades after finish work and ambient temperature, humidity and ventilation conditions are maintained at levels recommended for project upon completion.

1.9 WARRANTY

- A. Hardware and Shade Fabric: Draper's standard twenty-five year limited warranty.
- B. Motors and Controls: Draper's standard five year limited warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Draper®, Inc., which is located at: 411 S. Pearl P. O. Box 425; Spiceland, IN 47385-0425. ASD. Toll Free Tel: 800-238-7999; Tel: 765-987-7999; Fax: 866-637-5611; Web: www.draperinc.com.
- B. Substitutions: Approved equivalent
- C. Requests for substitutions will be considered in accordance with provisions of Section 016000. Contractor to be responsible for ALL COSTS related to a substitution requested less than 10 days prior to bid date, including cost of review by Architect.

2.2 MOTORIZED WINDOW SHADES

SECTION 122400 MOTORIZED WINDOW SHADES

- A. Type: UL listed, motorized, vertical roll-up, fabric window shade with motor, controls, mounting brackets, and other components necessary for complete installation; Motorized FlexShade AC as manufactured by Draper, Inc.
 - 1. Mounting brackets.
 - 2. Endcaps and fascia.
 - 3. Endcaps and ceiling/wall headbox.
 - 4. Endcaps with pocket headbox.
 - 5. Ceiling pocket.
- B. Shade Motor and Control System
 - 1. Motorized FlexShade® AC
 - a. Standard Motor: 120V AC, single phase, 60 HZ, instantly reversible, lifetime lubricated, and equipped with internal thermal overload protector, electric brake, and pre-set accessible limit switches. Tubular motor concealed inside each shade roller tube.
 - b. Quiet 120V AC motor operates at 38 Db measured 3 feet from the motor. Makes no audible clicks when motor stops or starts. Tubular motor concealed inside each shade roller tube.
 - c. Individual Control:
 - 1) Wall Switch – Toggle three position wall switch.
 - 2) Wall Switch – Key operated three position wall switch.
 - d. Group Control:
 - 1) 1 Motor Controller. Single motor controller for use with motorized roller shades, Venetian blinds, and louver systems. Can be used as a standalone device or part of a network. When networked, can still be independently operated and can be configured to respond to wall switches, RF remotes, and signals from 3rd party systems. On-board contact closure interface. RS-485 network with built-in network termination. On-board buttons for testing and configuring motors. Pluggable terminal blocks. Input power: 110-230VAC @ 50 / 60Hz. Output power: Maximum 6A at input power. Material: ABS plastic. Operating temperature: 32 - 140 ° F (0 - 60° C). Dimensions: 2¾" x 3½" x 2 1/8" (70 x 90 x 54mm). Enclosure: 4" x 4" X 4" (102 x 102 x 102mm).
 - 2) 4 Motor Controller. 4 motor controller for use with motorized roller shades, Venetian blinds and louver systems. Each port is independently operated and can be configured to respond to wall switches, RF remotes, and signals from 3rd party systems. RS-485 network with built-in network termination. Pluggable terminal blocks. Input power: 110-230VAC @ 50 / 60Hz. Output power: Maximum 6A at input power. Material: ABS plastic. Operating temperature: 32 - 140 ° F (0 - 60° C). Dimensions: 3½" x 7" x 1 7/8" (89 x 178 x 48mm). Enclosure: 6" x 4" x 4" (152 x 102 x 102mm).
 - 3) 1 Motor Isolating Relay (1ISO) – One ISO relay per motor. Allows 110-120V group switching. Allows for up to 12 motors on one double throw switch. Input Voltage: 120V AC/60Hz. Output Voltage: 120V AC/60Hz. Max Output Current: 4.0 Amps.

SECTION 122400 MOTORIZED WINDOW SHADES

- 4) 4 Motor Isolating Relay (GC4) – Panelized version with four ISO relays. Up to three 4ISOs can be linked together for control of up to 12 motors from any single 15 amp double throw wall switch. Input Voltage: 120V AC/60Hz. Output Voltage: 120V AC/60Hz. Max Output Current: 4.0 Amps. Installed in a 8 x 8 x 4 inch (203 x 203 x 102 mm) box.
 - e. Individual and Group Control: IGC4N1. Individual and Group control of up to four motors with up to three intermediate positions per motor.
- C. Configuration:
 - 1. Single Roller.
 - a. Mounting.
 - 1) Endcaps: Stamped steel with universal design suitable for mounting to ceiling, wall, and jamb. Provide size compatible with roller size. Endcap covers to match fascia/headbox finish.
 - 2) Brackets: 1/8 inch thick stamped steel, black powder coat, idler height adjuster, field adjustable to wall or ceiling mount.
 - (a) Mounted to ceiling.
 - (b) Mounted to wall.
 - (c) Mounted to jamb.
 - 3) Fascia: L shaped aluminum extrusion to conceal shade roller and hardware.
 - (a) Attachment: Snaps onto end caps without requiring exposed fasteners of any kind. Fascia can be mounted continuously across two or more shade bands.
 - (b) Finish: Selected from Manufacturers standard range.
 - (c) Finish: Custom powder coat as selected by the Architect.
 - 4) Headbox Ceiling/Wall Style: Aluminum fabrication with removable closure, endcaps, and back and top cover piece:
 - (a) Finish: Selected from Manufacturers standard range.
 - (b) Finish: Custom powder coat as selected by the Architect.
 - 5) Headbox, Pocket Style: Aluminum fabrication with removable closure, endcaps, and U-shaped pocket:
 - (a) Finish: Selected from Manufacturers standard range.
 - (b) Finish: Custom powder coat as selected by the Architect.
 - 6) Type D Shade pocket: Rectangular pocket with ceiling tile lip designed for recessed ceiling installation of window shades.
 - (a) Material: Extruded aluminum alloy with white epoxy paint finish.
 - (b) Size: 5 inches (127 mm) by 5-5/8 inches (137 mm) high.
 - (c) Closure Panel:
 - (1) 1-1/2 (38 mm) closure dimension.

SECTION 122400 MOTORIZED WINDOW SHADES

- (2) 3 inch (78 mm)
 - (d) Pocket Endcap Kit: Endcaps with 7/8 inch (22 mm) lip for support of acoustical ceiling panel.
 - (e) Corners: Welded one-piece aluminum sections connecting to and matching pockets to allow continuous shade recess at ceiling corners.
 - (f) Pocket ends: Welded one-piece aluminum sections connecting to and matching pockets.
- 7) Wall Clip with Closure panel: For site constructed ceiling recesses, provide removable closure panel to minimize slot for shade passage but allowing access to shade for maintenance.
 - (a) Material: Aluminum alloy with white epoxy paint finish.
 - (b) Tile Lip: Provide wall clip with 7/8 inch tile lip (22 mm).
 - (c) Closure width: 1-1/2 inches (38 mm).
 - (d) Closure width: 3 inches (75 mm).
 - (e) Closure Width: 5 inches (127 mm).
 - (f) Provide continuous wall clip, 1-3/4 (44 mm) by 3/16 inch (5 mm), for snap-in attachment of closure panel without fasteners.
- D. Aluminum Light Gap Reduction Channels
 - 1. L Angle - 3/4 inch by 1 inch (19 mm by 25 mm).
 - 2. L Angle - 1 inch by 2-3/4 inches (25 mm by 70 mm).
 - 3. U Channel - 1 inch by 2-1/2 inches (25 mm by 64 mm).
 - 4. H Channel - 1 inch (25 mm) by 5 inches (127 mm).
- E. Vinyl Light Gap Reduction Channels
 - 1. L Angle - 1-1/2 inches 3/4 inches (38 mm by 19 mm).
- F. Interior cable guide kit
 - 1. Interior cable hem bar finial.
 - 2. Cable mount.
 - 3. Cable.
 - 4. Tension Stop.
- G. Shade slat:
 - 1. Closed pocket elliptical slat: 1 inch (25 mm) aluminum elliptical slat inside of a 1-5/8 inch (41 mm) pocket with heat sealed ends.
 - 2. Open pocket elliptical slat: 1 inch (25mm) aluminum elliptical slat with plastic ends inside of a 1-5/8 inch (41 mm) pocket.
 - 3. Small Flat exposed hem bar: 7/8 inch x 5/16 inch (22 mm x 8 mm) aluminum rectangular hem bar with plastic end caps.
 - 4. Large Flat exposed hem bar: 1-1/2 inch x 5/16 inch (38 mm x 8 mm) aluminum rectangular hem bar with plastic end caps.
 - 5. Round exposed hem bar: Small 5/8 inch (16 mm) and Large 13/16 inch (21 mm) aluminum with plastic end caps.
- H. Roller: Fabricated from extruded aluminum or steel. Wall thickness and material selected by manufacturer to accommodate shade size. Provide with roller idler assembly of molded nylon and zinc-plated steel pin. Sliding pin to allow easy installation and removal of roller. Fabric connected to the roller tube with LSE (low surface energy) double sided adhesive specifically developed to attach coated textiles to metal. Adhesive attachment to eliminate horizontal impressions in fabric.

SECTION 122400 MOTORIZED WINDOW SHADES

- I. Coupling system: Couplings to join motorized shade rollers to allow operation by single motor. FlexShade Coupling System as manufactured by Draper, Inc. Provide endcaps to receive couplers and support multiple shades. Coupling system must be capable of up to 30-degree angles.

2.3 FABRIC

A. Light Filtering Fabrics

1. PVC Coated Fiberglass

a. Basketweave

- 1) E Screen™ 1% by Mermet®: PVC coated fiberglass yarn woven in 2 by 2 basketweave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 1 percent open, .020 inches thick, 13.3 oz/square yard.
- 2) E Screen™ 3% by Mermet®: PVC coated fiberglass yarn woven in 2 by 2 basketweave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 3 percent open, .017 inches thick, 11.6 oz/square yard.
- 3) E Screen™ 5% by Mermet®: PVC coated fiberglass yarn woven in 2 by 2 basketweave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 5 percent open, .016 inches thick, 10.7 oz/square yard.
- 4) E Screen™ 10% by Mermet®: PVC coated fiberglass yarn woven in 2 by 2 basketweave. .016 inches thick. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 10 percent open, .020 inches thick, 10.3 oz/square yd.
- 5) E Screen™ 1% with KOOLBLACK® by Mermet®: PVC coated fiberglass yarn woven in 2 by 2 basketweave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold®

standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 1 percent open, .021 inches thick. Weight: 12.95 oz/square yard.

- 6) E Screen™ with KOOLBLACK®. 3 percent openness factor by Mermet®; PVC coated fiberglass yarn woven in 2 by 2 basketweave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 3 percent open, .020 inches thick, 11.3 oz. per square yard.
- 7) E Screen™ with KOOLBLACK®. 5 percent openness factor by Mermet®; PVC coated fiberglass yarn woven in 2 by 2 basketweave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 5 percent open, .019 inches thick, 10.6 oz/square yard.
- 8) E Screen Deco™ 1% by Mermet®; PVC coated fiberglass yarn woven in 2 by 2 basketweave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. 1 percent open, .022 inches thick. 12.30 oz/square yard.
- 9) E Screen Deco™ 3% by Mermet®; PVC coated fiberglass yarn woven in 2 by 2 basketweave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. 3 percent open, .019 inches thick. 11.50 oz/square yard.
- 10) E Screen Chroma™ by Mermet®; PVC coated fiberglass yarn woven in 2 by 2 basketweave with metalized coating on outward side. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180,

SECTION 122400 MOTORIZED WINDOW SHADES

- ASTM G21. 3 percent open, .020 inches thick. 11.92 oz/square yard.
- 11) Natte™ 5% by Mermet: PVC coated fiberglass yarn woven in 2 by 2 basketweave. NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Openness factor: 5%. Thickness: 0.022 inches. Weight: 14.13 oz/square yard.
 - 12) Natte™ 10% by Mermet: PVC coated fiberglass yarn woven in 2 by 2 basketweave. NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Openness factor: 5%. Thickness: 0.021 inches. Weight: 13.48 oz/square yard.
 - 13) S Screen™ 1% by Mermet®: PVC coated fiberglass wrapped in polyester thread in a plain weave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. 3 percent open, .041 inches thick, 19.10 oz/square yard.
 - 14) S Screen™ 4% by Mermet®: PVC coated fiberglass wrapped in polyester thread in a plain weave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. ASTM E2180 and ASTM G21. Environmental benefits: RoHS – lead free. 4 percent open, .037 inches thick, 18.9 oz/square yard.
 - 15) S Screen Naturals™ 5% by Mermet®: PVC coated fiberglass wrapped in polyester thread in a fancy weave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. 5 percent open, .042 inches thick 15 oz/square yard.
 - 16) SheerWeave® Series SW2000 by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 by 2 basket weave. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B

Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 14.26 oz/sq yd, .019 inches thick. Series SW2000 average 5 percent open.

- 17) SheerWeave® Series SW2100 by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 by 2 basket weave. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 14.26 oz/sq yd, .019 inches thick. Series SW2100 average 10 percent open.
- 18) SheerWeave® Series SW2400 (2410) by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 x 2 basket weave. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 3 percent open .019 inches thick. 14.1 oz/square yard.
- 19) SheerWeave® Series SW2500 by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 x 2 basket weave. Fire rating: California U.S. Title 19 (small scale), NFPA

701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 1 percent open, .024 inches thick. 16.39 oz/square yard.

- 20) SheerWeave® Series SW2600 (2360) by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 x 2 basket weave. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 10 percent open, .017 inches thick. 10.4 oz/square yard.
- 21) SheerWeave® Series SW2900 (2390) by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 x 2 basket weave. Fire rating: California U.S. Title 19 (small scale), NFPA 101 (Class A Rating), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80, NFPA 701 TM#1 (small scale), IBC Section 803.1.1 (Class A Rating), NFPA 701 TM#2 (large scale). Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 5 percent open. .017 inches thick. 11.8 oz/square yard.

- 22) SheerWeave® Basic 3% by Phifer®. An economical alternative to traditional solar screen fabrics. Fire Rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale), NFPA 701 TM#2 (large scale), CAN/CGSB2-4.162-M80. Bacteria and Fungal Resistance ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental Certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Average 3 percent Openness. Average Fabric Thickness: .025 inch. Average Fabric Weight: 16.4 ounces per square yard.
- 23) SheerWeave® Basic 5% by Phifer®. An economical alternative to traditional solar screen fabrics. Fire Rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale), NFPA 701 TM#2 (large scale), CAN/CGSB2-4.162-M80. Bacteria and Fungal Resistance ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental Certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Average 5 percent Openness. Average Fabric Thickness: 0.022 inch. Average Fabric Weight: 14.1 ounces per square yard.
- 24) SheerWeave® Performance+ 2500 by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 x 2 basket weave with metalized coating on outward side. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use:

- RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 1 percent open, .024 inches thick. 16.39 oz/square yard.
- 25) SheerWeave® Performance+ 2410 by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 x 2 basket weave with metalized coating on outward side. Fire rating: California U.S. Title 19 (small scale), NFPA 101 (Class A Rating), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80, NFPA 701 TM#1 (small scale), IBC Section 803.1.1 (Class A Rating), NFPA 701 TM#2 (large scale). Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 3 percent open .019 inches thick. 14.1 oz/square yard.
 - 26) SheerWeave® Performance+ 2390 by Phifer®: 500 denier fiberglass, vinyl coated and woven into a 2 x 2 basket weave with metalized coating on outward side. Fire rating: California U.S. Title 19 (small scale), NFPA 101 (Class A Rating), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80, NFPA 701 TM#1 (small scale), IBC Section 803.1.1 (Class A Rating), NFPA 701 TM#2 (large scale). Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 5 percent open. .017 inches thick. 11.8 oz/square yard.
- b. Ribbed Weave
- 1) M Screen™ 1% by Mermet®: PVC coated fiberglass in 1 by 2 ribbed weave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. 1 percent open, .022 inches thick, 13.12 oz/square yard.

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- 2) M Screen™ 3% by Mermet®: PVC coated fiberglass in 1 by 2 ribbed weave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. 3 percent open, .022 inches thick, 12.27 oz/square yard.
- 3) M Screen™ 5% by Mermet®: PVC coated fiberglass in 1 by 2 ribbed weave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. 5 percent open, .022 inches thick, 11.3 oz/square yard.
- 4) M Screen Deco™ 5% by Mermet®: PVC coated fiberglass in 1 by 2 ribbed weave. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. 5 percent open, .020 inches thick, 11.3 oz/square yd.
- 5) SheerWeave® Series SW1000 SunScreen® by Phifer. PVC coated fiberglass in a ribbed weave. Fire Classification: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large scale). Bacteria and Fungal Resistance: ASTM E 2180, ASTM G21, AATCC30 Part 3, ASTM D 3273, GREENGUARD Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental: Certified to UL GREENGUARD® and GREENGUARD Gold® standards. Lead Free: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Approximate openness factor: 25%.
- 6) SheerWeave® Series SW3000 by Phifer®: Vinyl coated fiberglass and vinyl coated polyester woven into 62 by 20 mesh. Fire rating: NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), NFPA 701 TM#2 (large scale). Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical

emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 13.46 oz/sq yd, .028 inches thick. Average 14 percent open.

c. Satin Weave

- 1) T Screen™ with KOOLBLACK® 1% by Mermet®: PVC coated fiberglass woven mesh. Dark on one side, light on the other. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 1 percent open, .024 inches thick, 13.54 oz/square yard.
- 2) T Screen™ with KOOLBLACK® 3% by Mermet®: PVC coated fiberglass woven mesh. Dark on one side, light on the other. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 3 percent open, .029 inches thick, 13.27 oz/square yard.
- 3) T Screen™ with KOOLBLACK®. 5 percent openness factor by Mermet®: PVC coated fiberglass woven mesh. Dark on one side, light on the other. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 5 percent open, .027 inches thick, 12.48 oz/ square yard.
- 4) T Screen Deco™ 1% by Mermet®: PVC coated fiberglass satin style. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 1 percent open, .028 inches thick, 13.76 oz/square yd.
- 5) T Screen Deco™ 3% by Mermet®: PVC coated fiberglass satin style. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180,

- ASTM G21. Average 3 percent open, .028 inches thick, 12.98 oz/square yard.
- 6) T Screen Deco™ 5% by Mermet®: PVC coated fiberglass satin style. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 5 percent open, .028 inches thick, 11.89 oz/square yard.
- d. Twill Weave
- 1) 9803 3% by Mermet®: PVC coated fiberglass woven mesh. Dark on one side, light on the other. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 3 percent open, .025 inches thick, 11.6 oz/square yard.
 - 2) SheerWeave® Series SW2701 by Phifer®: Duplex basketweave fabric—light exterior color combined with dark interior color for thermal comfort and view-through. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4. 162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental Certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 1 percent open. .027 inches thick. 14.6 oz/square yard.
 - 3) SheerWeave® Series SW2703 by Phifer®: Duplex basketweave fabric—light exterior color combined with dark interior color for thermal comfort and view-through. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4. 162-M80, CAN/ULC S-102. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and

GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. 3 percent open. .028 inches thick. 14.0 oz/square yard.

- 4) SheerWeave® Series SW2705 by Phifer®: Duplex basketweave fabric—light exterior color combined with dark interior color for thermal comfort and view-through. GREENGUARD Gold®. Manufacturer to supply GREENGUARD Gold certificate. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4. 162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental Certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 5 percent open. .025 inches thick. 11.8 oz/square yard.
- 5) SheerWeave® Series SW2710 by Phifer®: Duplex basketweave fabric—light exterior color combined with dark interior color for thermal comfort and view-through. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4. 162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental Certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 10 percent open. .023 inches thick. 10.4 oz/square yard.
- 6) T Screen™ 1% by Mermet®: PVC coated fiberglass woven mesh. White, charcoal, or pearl backing color. Fire rating: NFPA 701-15 TM#1, California U.S. Title 19 CAN/ULC-S109-14 Small Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Average 1 percent open, .028 inches thick, 13.83 oz/square yard.

2. Fiberglass
 - a. Mock Leno Weave

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- 1) GreenScreen® Nature™ 5%: GreenScreen Nature is an inherently fire-retardant fabric constructed of 100 percent fiberglass yarn in a mock leno weave. Additional fire retardancy chemicals are not required. Recyclable, halogen- and PVC-free. Red List compliant. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109 Small & Large Scale. Microbial Resistance, ASTM E2180 and ASTM G21: Pass. UL GREENGUARD®, GREENGUARD Gold®. Approximate Openness Factor: 5 percent. Average Fabric Thickness: 0.010 inch (.024 mm). Average Fabric Weight: 5.10 ounces per square yard (174 grams per square meter).
- b. Ribbed Weave
 - 1) Vizela™ < 1% by Mermet®: 100 percent fiberglass with an EVA coating and PVC free. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. < 1% open, .013 inches thick, 8.7 oz/square yard.
 - 2) SilverScreen 4% by Verosol: 36 percent fiberglass and 64 percent vinyl with an ultra-fine layer of aluminum on the backside. Fire rating: NFP 92503 specification M1, NFPA 701, B5 5867 Part 2 Type B, AS 1530. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant - Lead Free, Formaldehyde free. 5 percent Open, 0.020 inches thick, 11.7974 oz/square yard.
3. Vinyl Coated Polyester
 - a. Basketweave
 - 1) SunTex® 90 by Phifer. Vinyl-coated polyester woven into a basketweave. For outdoor use. Fire Classification: NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), CFR 49V 571.302 (FMVSS 302), California Technical Bulletin 117, CAN/ULC S-109 (large scale) and ASTM E-662. Bacteria and Fungal Resistance: ASTM E 2180 and ASTM G21; includes Microban® antimicrobial additives. Environmental: Certified to UL GREENGUARD® and GREENGUARD Gold® standards. Lead Free: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Openness factor: approximately 10%. Thickness: 0.039 inches. Weight: 17.2 oz/square yard.
 - 2) SunTex® 90 Design by Phifer. Vinyl-coated polyester woven into a basketweave. For outdoor use. Fire Classification: NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), CFR 49V 571.302 (FMVSS 302), California Technical Bulletin 117, CAN/ULC S-109 (large scale) and ASTM E-662. Bacteria and Fungal Resistance: ASTM E 2180 and ASTM G21; includes Microban® antimicrobial additives.

- Environmental: Certified to UL GREENGUARD® and GREENGUARD Gold® standards. Lead Free: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Openness factor: approximately 10%. Thickness: 0.039 inches. Weight: 17.2 oz/square yard.
- 3) SunTex® 95 by Phifer. Vinyl-coated polyester woven into a basketweave. For outdoor use. Fire Classification: NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), CFR 49V 571.302 (FMVSS 302), California Technical Bulletin 117, CAN/ULC S-109 (large scale) and ASTM E-662. Bacteria and Fungal Resistance: ASTM E 2180 and ASTM G21; includes Microban® antimicrobial additives. Environmental: Certified to UL GREENGUARD® and GREENGUARD Gold® standards. Lead Free: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Openness factor: approximately 5%. Thickness: 0.029 inches. Weight: 15.4 oz/square yard.
 - 4) SunTex® 97 by Phifer. Vinyl-coated polyester woven into a basketweave. For outdoor use. Fire Classification: NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), CFR 49V 571.302 (FMVSS 302), California Technical Bulletin 117, CAN/ULC S-109 (large scale) and ASTM E-662. Bacteria and Fungal Resistance: ASTM E 2180 and ASTM G21; includes Microban® antimicrobial additives. Environmental: Certified to UL GREENGUARD® and GREENGUARD Gold® standards. Lead Free: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Openness factor: approximately 3%. Thickness: 0.033 inches. Weight: 16.0 oz/square yard.
 - 5) SheerWeave® Series PW3500 (4000) by Phifer®: Vinyl coated polyester yarn woven into basketweave pattern. Uses DOW ECOLIBRIUM™ bio-based, phthalate-free plasticizer. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental Certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content, REACH (EC 1907/2006) compliant. Average 5 percent open, 19.2 oz/sq yd, .036 inches thick.

- 6) SheerWeave® Series PW4100 by Phifer®: Vinyl coated polyester yarn woven into basketweave pattern. Uses DOW ECOLIBRIUM™ bio-based, phthalate-free plasticizer. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental Certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content, REACH (EC 1907/2006) compliant. Average 10 percent open, 17.5 oz/sq yd, .035 inches thick.
- 7) SheerWeave® Series PW4400 by Phifer®: Vinyl coated polyester yarn woven into basketweave pattern. Uses DOW ECOLIBRIUM™ bio-based, phthalate-free plasticizer. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental Certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content, REACH (EC 1907/2006) compliant. Average 3 percent open, 20.7 oz/sq yd, .037 inches thick.
- 8) SheerWeave® Series PW4500 by Phifer®: Vinyl coated polyester yarn woven into basketweave pattern. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale). Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to GREENGUARD and GREENGUARD UL Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content

- and REACH (EC 1907/2006) compliant. Average 5 percent open, 14.4 oz/sq yd, .024 inches thick.
- 9) SheerWeave® Series PW4600 by Phifer®: Vinyl coated polyester yarn woven into basketweave pattern. Fire rating: Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale). Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Average 3 percent open, 17.4 oz/sq yd, .030 inches thick.
 - 10) Soltis Harmony 88 by Ferrari. PVC-coated polyester with pre-tensioning process for dimensional stability. Flame Retardancy: B-s2,d0 / EN 13501-1, M1/NFP92-507, B1/DIN 4102-1, BS 7837, BS 5867, Schwerbrennbar Q1-Tr1/ONORM, A3800-1, CAN/ULC-S 109, M1/UNE 23727-90, Classe 1/EN 13773, CSFM T19, Method 1 & 2/ NFPA 701, Class A/ASTM E84, 1530.3/AS NZS, Group 1/AS NZS 3837, G1/GOST.30244.94. Environment: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Recyclable through TaxyLoop®. 8 percent open, .018 inches thick, 10.61 oz/square yard.
 - 11) Soltis Horizon 86 by Ferrari. PVC-coated polyester with pre-tensioning process for dimensional stability. Flame Retardancy: B-s2,d0 / EN 13501-1, M1/NFP92-507, B1/DIN 4102-1, BS 7837, BS 5867, Schwerbrennbar Q1-Tr1/ONORM, A3800-1, CAN/ULC-S 109, M1/UNE 23727-90, Classe 1/EN 13773, CSFM T19, Method 1 & 2/ NFPA 701, Class A/ASTM E84, 1530.3/AS NZS, Group 1/AS NZS 3837, G1/GOST.30244.94. Environment: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Recyclable through TaxyLoop®. 14 percent open, .018 inches thick, 11.2 oz/square yard.
 - 12) Soltis® Master 99 by Serge Ferrari®: PVC-coated polyester with silver backing on outside and pre-tensioning process for dimensional stability. Fire rating: Method 1/NFPA 701, CSFM T19, Class A/ ASTM E84. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Recyclable through TaxyLoop®. 3 percent open, .0156 inches thick, 8.6 oz/ square yard.

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- 13) Soltis® Perform 92 by Serge Ferrari®: PVC-coated polyester with silver backing on outside and pre-tensioning process for dimensional stability. Fire rating: Method 1/NFPA 701, CSFM T19, Class A/ ASTM E84. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Recyclable through TexyLoop®. 4 percent open, .018 inches thick, 12.4 oz/square yard.
- b. Decorative Weave
 - 1) SheerWeave® Series SW5000 by Phifer®: Polyester and vinyl coated polyester woven into a 42 by 20 mesh. Fire rating: California Technical Bulletin 117 Sect. E. Part 1/ UBC (Class 1)/British Standard 5867. Varies depending on color. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, ASTM D3273, AATCC 30 Part 3, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 12.3 to 14.5 oz/sq yd, .035 inches - .044 inches thick, depending on color. 5 to 10 percent open, depending on color.
- c. Plain Weave
 - 1) SheerWeave® PW4800 by Phifer®: Vinyl coated polyester with maximum UV blockage. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ ULC-S 109 (large and small scale), CAN/CGSB2-4.162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. 1 percent openness factor. 18.5 oz/sq yd, .036 inches thick.
- d. Twill Weave
 - 1) SheerWeave® Series PW4550 by Phifer®: Vinyl coated polyester yarn woven into basketweave pattern. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale). Bacteria and fungal Resistance. ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL

- GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Average 5 percent open, 12.5 oz/sq yd, .025 inches thick.
- 2) SheerWeave® Series PW4650 by Phifer®: Vinyl coated polyester yarn woven into basketweave pattern. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale). Bacteria and fungal Resistance. ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Average. 3 percent open, 13.3 oz/sq yd, .026 inches thick.
- 3) SheerWeave® PW4901 by Phifer®: Vinyl coated polyester with maximum UV blockage. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4. 162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. UV protection: Seal of Approval by the Melanoma International Foundation (MIF) for effectiveness in preventing sun damage to the skin or eyes. 1 percent openness factor. 15.85 oz/sq yd, .028 inches thick.
- 4) SheerWeave® PW4903 by Phifer®: Vinyl coated polyester with maximum UV blockage. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), NFPA 101 (Class A Rating), IBC Section 803.1.1 (Class A Rating), BS 5867 Part 2 Type B Performance, NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale),

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CAN/CGSB2-4. 162-M80. Bacteria and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, UL GREENGUARD® Mold and Bacteria Standard ASTM 6329; includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. UV protection: Seal of Approval by the Melanoma International Foundation (MIF) for effectiveness in preventing sun damage to the skin or eyes. 3 percent openness factor. 14.9 oz/sq yd, .027 inches thick.

4. Polyester
 - a. Basketweave
 - 1) SheerWeave® Series SW8000 by Phifer®: PVC-free polyester. Fire rating: California U.S. Title 19 (small scale), BS 5867 2008 Part 2 Type B Performance, IBC Section 803.1.1 (Class A Rating), NFPA 701 TM#1 (small scale), NFPA 701 TM#2 (large scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4. 162-M80, B1 (DIN 4102-1), NFPA 101 (Class A Rating). Bacteria and fungal resistance: ASTM E 2180, ASTM G21. Environmental certification: Cradle to Cradle Certified™ Bronze and certified to ul GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, ANSI/WCMA A 100.1-2007 for lead content, US Consumer Product Safety Commission Section 101 and REACH (EC 1907/2006) compliant. UV Protection: Seal of Approval by the Melanoma International Foundation (MIF) for effectiveness in preventing sun damage to the skin or eyes. Average 3% open. .019 inches thick. 7.35 oz/square yard.
 - b. Decorative Weave
 - 1) SheerWeave® Series SW7450 by Phifer®: PVC-free polyester with acrylic coating. Fire rating: California Technical Bulletin 117, IBC Section 803.1.1 (Class A Rating), NFPA 101 (Class A Rating). Bacteria and Fungal Resistance: ASTM G21-96, AATCC 174-1998 Part II and III. Environmental Certification: Certified to GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe Use: RoHS/Directive 2002/95/EC, ANSI/WCMA A 100.1-2007 for lead content, US Consumer Product Safety Commission Section 101. UV Protection: Seal of Approval by the Melanoma International Foundation (MIF) for effectiveness in preventing sun damage to the skin or eyes. .026 inches thick, 6.54 oz/square yard.
 - c. Fancy Weave
 - 1) Verona Daylight™ by Mermet. 100% polyester. Fire Classifications: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Bacterial

Resistance: ASTM E2180, ASTM G21. Environment: RoHS - Lead Free, certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Openness factor: less than 1%. .021 inches thick, 5.90 oz/square yard.

d. Diamond Knit

- 1) GreenScreen Evolve® 3%: GreenScreen Evolve is a fire retardant PVC-free fabric is constructed of 100 percent polyester yarn, with up to 78% Repreve polyester. Repreve is recycled and recyclable, contains low VOC's, and made in the USA. Fire rating: NFPA 701-99 TM#1, California U.S. Title 19, Cradle to Cradle Certified Silver, UL GREENGUARD®, GREENGUARD Gold®, PVC Free. Approximate Openness Factor: 3 percent. Average Fabric Thickness: 0.027 inch (.068 mm). Average Fabric Weight: 8.41 ounces per square yard. Microbial Resistance, ASTM E2180 and ASTM G21: Pass.
- 2) GreenScreen Revive® 1%. GreenScreen Revive is a fire retardant PVC-free fabric constructed of 100 percent polyester yarn, with a minimum of 89 percent Repreve polyester. Repreve is recycled and recyclable, contains low VOC's, and made in the USA. Fire rating: NFPA 701-99 TM#1, California U.S. Title 19, Cradle to Cradle Certified Silver, UL GREENGUARD®, GREENGUARD Gold®. Approximate Openness Factor: 1 percent. Average Fabric Thickness: 0.019 inch (0.48 mm). Average Fabric Weight: 5.87 ounces per square yard.
- 3) GreenScreen Revive® 5%. GreenScreen Revive is a fire retardant PVC-free fabric is constructed of 100 percent polyester yarn, with a minimum of 89 percent Repreve polyester. Repreve is recycled and recyclable, contains low VOC's, and made in the USA. Fire rating: NFPA 701-99 TM#1, California U.S. Title 19, Cradle to Cradle Certified Silver, UL GREENGUARD, GREENGUARD Gold, Green PVC Free. Approximate Openness Factor: 5 percent. Average Fabric Thickness: 0.017 inch (.043 mm). Average Fabric Weight: 5.01 ounces per square yard.

e. Linen Pattern

- 1) SheerWeave® Series SW7650 by Phifer®: PVC-free polyester. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale). Bacteria and fungal resistance: ASTM G21-96, AATCC 174-1998 Part II and III. Environmental certification: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, ANSI/WCMA A 100.1-2007 for lead content, US Consumer Product Safety Commission Section 101. UV protection: Seal of Approval by the Melanoma International Foundation (MIF) for effectiveness in preventing sun damage to the skin or eyes. .014 inches thick, 6.2 oz/square yard.

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5. Thermoplastic Olefin
 - a. Basketweave
 - 1) SheerWeave® Infinity2 1%: sustainable window treatment fabric eco-friendly basketweave. Core yarn and coating are PVC-free, lead-free and 100 percent recyclable. Fire classification: ASTM E-84 (Class I), NFPA 701-2004 TM#1 (small scale), NFPA 101 (Class A Rating) and CAN/ULC-S 109-03 Large, UL GREENGUARD®, GREENGUARD Gold®. Average 1 percent open. Average Fabric Thickness: .033 inch (.838 mm) Average Fabric Weight: 14.63 ounces per square yard.
 - 2) SheerWeave® Infinity2 3%: sustainable window treatment fabric eco-friendly basketweave. Core yarn and coating are PVC-free, lead-free and 100 percent recyclable. Fire classification: ASTM E-84 (Class I), NFPA 701-2004 TM#1 (small scale), NFPA 101 (Class A Rating) and CAN/ULC-S 109-03 Large, UL GREENGUARD®, GREENGUARD Gold®. Average 3 percent open. Average Fabric Thickness: .031 inch (.79 mm) Average Fabric Weight: 13.69 ounces per square yard.
 - 3) SheerWeave® Infinity2 5%: sustainable window treatment fabric eco-friendly basketweave. Core yarn and coating are PVC-free, lead-free and 100 percent recyclable. Fire classification: ASTM E-84 (Class I), NFPA 701-2004 TM#1 (small scale), NFPA 101 (Class A Rating) and CAN/ULC-S 109-03 Large, UL GREENGUARD®, GREENGUARD Gold®. Average 5 percent open. Average Fabric Thickness: .03 inch (.76 mm). Average Fabric Weight: 12.82 ounces per square yard.
 - B. Room Darkening Fabrics
 1. Opaque
 - a. PVC Coated Fiberglass
 - 1) SheerWeave® Series SW7100 Blackout by PhiFer®: PVC-coated Fiberglass laminated with a 2-ply PVC film. Fire rating: NFPA 701 TM#1 (small scale), NFPA 701 TM#2 (large scale), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale), NFPA 101 (Class B Rating), IBC Section 803.1.1 (Class B Rating). Bacterial and fungal resistance: ASTM E 2180, ASTM G21, ASTM G22, AATCC30 Part 3, ASTM D 3273, GREENGUARD® Mold and Bacterial Standard ASTM 6329; Style 2000 face includes Microban® antimicrobial additives. Environmental certification: Certified to UL GREENGUARD and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe Use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101, ANSI/WCMA A 100.1-2007 for lead content and REACH (EC 1907/2006) compliant. Opaque, .025 inches thick, 21.6 oz/square yard, opaque.
 - b. Fiberglass

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- 1) Apagón Style III is a 3-ply opaque shade fabric consisting of vinyl, fiberglass, and a proprietary coating for maximum blackout. Thread Count: 59 threads per square inch. Fire rating: NFPA 701-2019 Test Method 1. Environmental Benefits: ASTM D3335 85a - Lead Testing. Bacterial and fungal resistance: ASTM Method G-21-15 – Resistance to Fungi. Opaque, .0131 inches thick, 12.8 oz/square yard.
 - 2) Flocké® by Mermet®: Opaque, PVC-free fiberglass textile with acrylic flocked backing. Antistatic treated. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Draper shades made with this fabric are GreenSpec® listed. Opaque, .020 inches thick, 15.93 oz/square yard.
 - 3) SunBloc Series SB9000: Close woven fiberglass base textile with sun-resistant vinyl film bonded to each side, opaque with minimum tensile strength of 190 pounds for warp and 180 pounds for fill. Fire rating: NFPA 701 1006-Test 1, California U.S. Title 19. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. REACH and RoHS compliant - Lead Free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Washable and stain resistant. Same color both sides. Opaque, .015 inches thick, 12 oz/square yard.
 - 4) SunBloc Series SB9100: Close woven fiberglass base textile with sun-resistant vinyl film bonded to each side, opaque with minimum tensile strength of 190 pounds for warp and 180 pounds for fill. Fire rating: NFPA 701 1006-Test 1, California U.S. Title 19. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. REACH and RoHS compliant - Lead Free. Bacterial and fungal resistance: ASTM E2180, ASTM G21. Washable and stain resistant. White exterior in all colors. Opaque, .013 inches thick, 12 oz/square yard.
- c. PVC Coated Polyester.
- 1) Soltis® Opaque B92 by Serge Ferrari®. PVC-coated polyester with silver backing on outside and pre-tensioning process for dimensional stability. Fire rating: Method 1 and 2/NFPA 701, Class A / ASTM E84. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Recyclable through TexyLoop®. 0 percent open, .0312 inches thick, 19.1 oz/square yard.
- d. Polyester
- 1) SheerWeave® Series SW7000 Blackout by Phifer®: PVC-free polyester with acrylic foamed backing. Fire rating:

- California U.S. Title 19 (small scale), BS 5867 Part 2 Type B Performance, IBC Section 803.1.1 (Class A Rating), NFPA 101 (Class A Rating), NFPA 701 TM#1 (small scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB2-4. 162-M80. Bacteria and fungal resistance: ASTM G21, AATCC 174-1998 Part II and III. Environmental certification: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content. Draper shades made with this fabric are GreenSpec® listed. Opaque, .030 inches thick, 13.92 oz/square yard.
- 2) SheerWeave® Series SW7400 by Phifer®: PVC-free polyester with acrylic foamed backing. Fire rating: California U.S. Title 19 (small scale), CAN/ULC-S 109 (large and small scale), CAN/CGSB 2-4. 162-M80, NFPA 701 TM#1 (small scale), NFPA 701 TM#2 (large scale). Bacteria and Fungal Resistance: ASTM G21-96, AATCC 174-1998 Part II and III. Environmental Certification: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe Use: RoHS/Directive 2002/95/EC, ANSI/WCMA A 100.1-2007 for lead content, US Consumer Product Safety Commission Section 101. UV Protection: Seal of Approval by the Melanoma International Foundation (MIF) for effectiveness in preventing sun damage to the skin or eyes. Opaque, .029 inches thick, 12.53 oz/square yard.
 - 3) SheerWeave® Series SW7500 by Phifer®: PVC-free polyester with an acrylic coating. Fire rating: California U.S. Title 19 (small scale), NFPA 101 (Class A Rating), NFPA 701 TM#1 (small scale), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale), IBC Section 803.1.1 (Class A Rating), CAN/CGSB 2-4.162-M80. Bacterial and fungal resistance: ASTM E 2180 and ASTM G21. Environmental certification: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, US Consumer Product Safety Commission Section 101 and ANSI/WCMA A 100.1-2007 for lead content. Opaque, .016 inches thick, 12.14 oz/square yard.
 - 4) SheerWeave® Series SW7600 by Phifer®: PVC-free polyester with an acrylic foamed backing. Fire rating: California U.S. Title 19 (small scale), NFPA 701 TM#1 (small scale), BS 5867 Part 2 Type B Performance, CAN/ULC-S 109 (large and small scale). Bacterial and fungal resistance: ASTM G21-96, AATCC 174-1998 Part II and III. Environmental certification: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. Safe use: RoHS/Directive 2002/95/EC, ANSI/WCMA A 100.1-2007 for lead content, US Consumer

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Product Safety Commission Section 101. UV protection: Seal of approval by the Melanoma International Foundation (MIF) for effectiveness in preventing sun damage to the skin or eyes. Opaque, .020 inches thick, 11.8 oz/square yard.

- 5) Verona Twilight™ by Mermet®. 50 percent Polyester and 50 percent acrylic with foam backing. Duraguard fabric protector and Sanitized Antimicrobial Protection. Plain weave that is 100% PVC free. Fire rating: NFPA 701-10 TM#1, California U.S. Title 19, CAN/ULC-S109-03 Small & Large Flame Test. Environmental Benefits: Certified to UL GREENGUARD® and GREENGUARD Gold® standards for low chemical emissions into indoor air during product usage. RoHS compliant – lead free. Bacterial and fungal resistance: ASTM E2180. 0% open, .024 inches thick, 11.65 oz/square yard.

- C. Color and pattern: _____, No. ____.
- D. Color and pattern: As indicated in Color Schedule on Drawings.
- E. Color and pattern: As selected by Architect from manufacturer's standard range.
- F. Custom Printed Graphics: As submitted to manufacturer in accordance with manufacturer's guidelines.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Coordinate requirements for blocking and structural supports to ensure adequate means for installation of window shades.
- B. Coordinate requirements for blocking, construction of shade pockets, and structural supports to ensure adequate means for installation of window shades.
- C. Coordinate installation of recessed shade pockets with construction of suspended acoustical panel ceilings specified in Section 09510.
- D. Coordinate installation of recessed shade pockets with construction of suspended gypsum board ceilings specified in Section 09260.

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- E. Coordinate requirements for power supply conduit, and wiring required for window shade motors and controls.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install roller shades level, plumb, square, and true. Allow proper clearances for window operation hardware.
- C. Shade pockets:
 - 1. Install shade pockets prior to installation of suspended ceiling system. Attach to supporting structure with screws through top of pocket at 24 inches (610 mm) minimum centers.
 - 2. Install shade pockets in conjunction with installation of suspended ceiling system. Attach to supporting structure with screws through top of pocket at 24 inches (610 mm) minimum centers.
 - 3. Install corner pieces securely and in alignment with pockets.
 - 4. Install pocket ends securely and in alignment with pockets.
 - 5. After interior construction is essentially complete, install shade and operating mechanism in pocket.
- D. Install the following items to conceal roller and operating mechanism. Do not use exposed fasteners.
 - 1. Fascias.
 - 2. Closure panels.
 - 3. Endcaps.
- E. Position shades level, plumb, and at proper height relative to adjacent construction. Secure with fasteners recommended by manufacturer.

3.4 TESTING AND DEMONSTRATION

- A. Test motorized window shades to verify that controls, limit switches, interface to other building systems, and other operating components are functional. Correct deficiencies.
- B. Demonstrate operation of shades to Owner's designated representatives.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 SCHEDULES

- A. Refer to Drawings for shade types and locations.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Manually operated, roll-up fabric interior window shades including mounting and operating hardware.

1.2 REFERENCES

- A. NFPA 701-99 - Fire Tests for Flame-Resistant Textiles and Films.
- B. GREENGUARD Environmental Institute Gold.
- C. US Green Building Council.
- D. ANSI/WCMA A100.1-2018

1.3 SUBMITTALS

- A. Submit under provisions of Section 01330 - Submittal Procedures:
- B. Product Data: Manufacturer's data sheets on each product specified, including:
 - 1. Preparation instructions and recommendations.
 - 2. Installation and maintenance instructions.
 - 3. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
 - 4. Storage and handling requirements and recommendations.
 - 5. Mounting details and installation methods.
- C. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams and relationship to adjacent work.
- D. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings, field verified window dimensions, quantities, type of shade, controls, fabric, and color, and include opening sizes and key to typical mounting details.
- E. Selection Samples: For each finish product specified, two complete sets of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns.
- F. Verification Samples: For each finish product specified, two complete sets of shade components, unassembled, demonstrating compliance with specified requirements. Shade fabric sample and aluminum finish sample as selected, representing actual product, color, and patterns. Mark face of material to indicate interior faces.
- G. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

- H. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain roller shades through one source from a single manufacturer with a minimum of twenty years experience in manufacturing products comparable to those specified in this section.
- B. NFPA Flame-Test: Passes NFPA 701. Materials tested shall be identical to products proposed for use.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver window shades until building is enclosed and construction within spaces where shades will be installed is substantially complete.
- B. Deliver products in manufacturer's original, unopened, undamaged containers with labels intact.
- C. Label containers and shades according to Window Shade Schedule.
- D. Store products in manufacturer's unopened packaging until ready for installation.

1.6 SEQUENCING

- A. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.7 PROJECT CONDITIONS

- A. Install roller shades after finish work and ambient temperature, humidity and ventilation conditions are maintained at levels recommended for project upon completion.

1.8 WARRANTY

- A. Hardware and Shade Fabric: Draper's standard twenty-five year limited warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

12493 – CLUTCH OPERATED MANUAL WINDOW SHADES

- A. Acceptable Manufacturer: Draper, Inc., which is located at: 411 S. Pearl P. O. Box 425; Spiceland, IN 47385-0425. ASD. Toll Free Tel: 800-238-7999; Tel: 765-987-7999; Fax: 866-637-5611; Web: www.draperinc.com.
- B. Substitutions: Approved equal.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 MANUALLY OPERATED WINDOW SHADES

- A. Manually Operated Window Shades with Independent Control: Manually operated, vertical roll-up, fabric window shade with components necessary for complete installation; Clutch-operated FlexShade as manufactured by Draper, Inc.
 - 1. Operation: Bead chain and clutch operating mechanism allowing shade to stop when chain is released. Designed never to need adjustment or lubrication. Provide limit stops to prevent shade from being raised or lowered too far.
 - a. Clutch mechanism: Fabricated from high carbon steel and molded fiberglass reinforced polyester or injected molded nylon. Minimum 20 lb. lifting capacity. White or Black color as selected by Architect.
 - b. Bead chain loop: Stainless steel bead chain hanging at side of window.
 - c. Idler Assembly: Provide roller idler assembly of molded nylon with adjustable or spring-loaded length idler pin to facilitate easy installation, and removal of shade for service.
 - d. Bead Chain Hold Down: P-Clip (standard).
 - 2. Single Roller Configuration:
 - a. Mounting:
 - 1) Universal Mounting brackets.
 - 2) Endcaps only.
 - 3) Endcaps and fascia.
 - 4) Ceiling/Wall Style Headbox.
 - 5) Recessed Pocket Headbox.
 - b. Brackets: Plated stamped steel. Provide size compatible with roller size.
 - 1) Mounted to ceiling.
 - 2) Mounted to wall.
 - 3) Mounted to jamb (preferred, where possible)
 - c. Endcaps: Stamped steel with universal design suitable for mounting to ceiling, wall, and jamb. Provide size compatible with roller size.
 - 1) Endcap covers: To match fascia or headbox color.
 - d. Fascia: L shaped aluminum extrusion to conceal shade roller and hardware.
 - 1) Attachment: Snaps onto endcaps without requiring exposed fasteners of any kind. Fascia can be mounted continuously across two or more shade bands. No notching is required.
 - 2) Shape: Square Fascia Panel.

- 3) Finish: Clear anodized.
- e. Headbox Ceiling/Wall style: Aluminum fabrication with removable closure, endcaps, and back and top cover piece:
 - 1) Finish: Clear anodized.
- 3. Roller Tube: Fabricated from extruded aluminum, galvanized steel, or enameled steel. Diameter, wall thickness, and material selected by manufacturer to accommodate shade type and size. Minimum roller diameter 1.5 inches. Fabric connected to the roller tube with LSE (low surface energy) double sided adhesive specifically developed to attach coated textiles to metal. Adhesive attachment to eliminate horizontal impressions in fabric.
- 4. Shade slat:
 - a. Closed pocket elliptical slat: 1 inch (25 mm) aluminum elliptical slat inside of a 1-5/8 inch (41 mm) pocket with heat sealed ends.
- 5. Light Gap Reduction Channels.
 - a. Aluminum L Angle – 3/4 inch (19 mm) by 1 inch (25 mm).
- 6. Interior cable guide kit.
 - a. Slat/hem bar is a 5/8" (16 mm) round bar for use in a 1-5/8" (41 mm) open-ended hem pocket.

2.3 FABRIC

- A. Light-Filtering Fabrics
- B. Color and pattern: As selected by Architect from manufacturer's standard range.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Coordinate requirements for blocking and structural supports to ensure adequate means for installation of window shades.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install roller shades level, plumb, square, and true. Allow proper clearances for window operation hardware.

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- C. Install the following items to conceal roller and operating mechanism. Do not use exposed fasteners.
 - 1. Closure panels.
 - 2. Endcaps.
- D. Install headbox, side channels, and sill channel with sealant specified in Section 07900 - Joint Sealers to eliminate light leaks at perimeter of shade system.
- E. Position shades level, plumb, and at proper height relative to adjacent construction. Secure with fasteners recommended by manufacturer.

3.4 TESTING AND DEMONSTRATION

- A. Test window shades to verify that operating mechanism and other operating components are functional. Correct deficiencies.
 - 1. Chain and clutch.
- B. Demonstrate operation of shades to Owner's designated representatives.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

3.6 SCHEDULES

- A. Refer to Drawings for shade types and locations.

END OF SECTION

SECTION 160500 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Raceways.
 - 2. Building wire and connectors.
 - 3. Supporting devices for electrical components.
 - 4. Electrical identification.
 - 5. Electricity-metering components.
 - 6. Concrete equipment bases.
 - 7. Electrical demolition.
 - 8. Cutting and patching for electrical construction.
 - 9. Touchup painting.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit.
- C. IMC: Intermediate metal conduit.
- D. LFMC: Liquidtight flexible metal conduit.
- E. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

- A. Product Data: For replacement equipment, devices and wiring methods.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by Underwriters Laboratories Inc. (UL), and marked for intended use.
- B. Comply with NFPA 70.

SECTION 160500 - BASIC ELECTRICAL MATERIALS AND METHODS

- C. All required permits and certificates of controlled inspection shall be obtained and paid for by the contractor and pertinent certificates shall be delivered to the owners representative before final acceptance and final request for payment.
- D. Electrical Contractor shall obtain and pay for a third party electrical inspector to submit a certificate of inspection prior to final payment being issued by the District.

1.6 PREPARATION AND COORDINATION

- A. Identify, test and confirm circuit breaker or alternate disconnecting means for any electrical feeder or branch circuit, even when identified on the installation drawings, prior to performing any work on that circuit.
- B. Coordinate chases, slots, inserts, sleeves, and openings with general construction work and arrange in building structure during progress of construction to facilitate the electrical installations that follow.
- C. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment requiring positioning before closing in the building.
- D. Coordinate location of access panels and doors for electrical items that are concealed by finished surfaces.
- E. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.
- F. Where electrical identification markings and devices will be concealed by acoustical ceilings and similar finishes, coordinate installation of these items before ceiling installation.

PART 2 - PRODUCTS

2.1 RACEWAYS

- A. EMT: ANSI C80.3, zinc-coated steel, with set-screw or compression fittings. Use of set-screw fittings is restricted to where conduit is not used as a grounding means.
- B. FMC: Zinc-coated steel.
- C. IMC: ANSI C80.6, zinc-coated steel, with threaded fittings.
- D. LFMC: Zinc-coated steel with sunlight-resistant and mineral-oil-resistant plastic jacket.
- E. RNC: NEMA TC 2, Schedule 40 PVC, with NEMA TC3 fittings.
- F. Raceway Fittings: Specifically designed for the raceway type with which used.

SECTION 160500 - BASIC ELECTRICAL MATERIALS AND METHODS

- G. Surface Metal Raceway (wiremold): There shall be no surface mounted raceways permitted on the project. All raceways shall be concealed within walls, ceilings or floors. Coordinate route with Architect as required.

2.2 CONDUCTORS

2.2.1 GENERAL

Cables shall be listed for the environment in which they are installed. Where cables are installed exposed in air plenums, such cables shall be specifically listed for plenum installation.

2.2.2 POWER CABLE

- A. Conductors, No. 10 AWG and Smaller: Solid or stranded copper.
- B. Conductors, Larger Than No. 10 AWG: Stranded copper.
- C. Insulation: Thermoplastic, rated at 90 deg C minimum wet and dry for services and under-floor wiring; rated at 75 deg C minimum wet and dry for remaining branch circuits.
- D. UL-listed, factory-fabricated wiring connectors of size, ampacity rating, material, type, and class for application and service indicated.

2.2.3 COMMUNICATIONS CABLE

- A. Telephone (Quad): No. 24 AWG, 2-pair Category 3.
- B. Computer (Ethernet): Category 6, No. 24 AWG, 4-pair (or engineer approved equivalent).
- C. Building / HVAC Control System(s):
No. 18 AWG, 1-pair TW/SH. Belden Cat. No. 82760.
No. 18 AWG, 4-conductor TW/SH. Belden Cat. No. 82418.
No. 22 AWG, 3-pair TW/SH. Belden Cat. No. 82777.
No. 16 AWG, 6-conductor. (For valves & fan relays at fan coils)
- D. UL-listed, factory-fabricated wiring connectors of size, ampacity rating, material, type, and class for application and service indicated.
- E. Cables installed in plenum spaces shall be rated as suitable for plenum installation.

2.3 SUPPORTING DEVICES

- A. Material: Cold-formed steel, with corrosion-resistant coating acceptable to authorities having jurisdiction.
- B. Metal Items for Use Outdoors or in Damp Locations: Hot-dip galvanized steel.

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- C. Slotted-Steel Channel Supports: Flange edges turned toward web, and 9/16-inch-diameter slotted holes at a maximum of 2 inches o.c., in webs.
- D. Slotted-Steel Channel Supports: Comply with Division 5 Section "Metal Fabrications" for slotted channel framing.
 - 1. Channel Thickness: Selected to suit structural loading.
 - 2. Fittings and Accessories: Products of the same manufacturer as channel supports.
- E. Nonmetallic Channel and Angle Systems: Structural-grade, factory-formed, glass-fiber-resin channels and angles with 9/16-inch-diameter holes at a maximum of 8 inches o.c., in at least one surface.
 - 1. Fittings and Accessories: Products of the same manufacturer as channels and angles.
 - 2. Fittings and Accessory Materials: Same as channels and angles, except metal items may be stainless steel.
- F. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.
- G. Pipe Sleeves: ASTM A 53, Type E, Grade A, Schedule 40, galvanized steel, plain ends.
- H. Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for nonarmored electrical cables in riser conduits. Plugs have number and size of conductor gripping holes as required to suit individual risers. Body constructed of malleable-iron casting with hot-dip galvanized finish.
- I. Expansion Anchors: Carbon-steel wedge or sleeve type.
- J. Toggle Bolts: All-steel springhead type.
- K. Powder-Driven Threaded Studs: Heat-treated steel.

2.4 WIRING DEVICES

- A. Straight-Blade and Locking Receptacles: Heavy-Duty grade.
- B. GFCI Receptacles: Feed-through type, with integral NEMA WD 6, Configuration 5-20R duplex receptacle arranged to protect connected downstream receptacles on same circuit. Design units for installation in a 2-1/2-inch- (70-mm-) deep outlet box.
- C. Snap Switches: Heavy-duty, quiet type.
- D. Combination Switch and Receptacle: Both devices in a single gang unit with plaster ears and removable tab connector that permit separate or common feed connection.
 - 1. Switch: 20 A, 120/277-V AC.

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2. Receptacle: NEMA WD 6, Configuration 5-15R.
- E. Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on/off switches and audible and electromagnetic noise filters.
 1. Control: Continuously adjustable slide, toggle, or rotary knob. Single-pole or three-way switch to suit connections.
 2. Incandescent Lamp Dimmers: Modular, 120 V, 60 Hz with continuously adjustable rotary knob, toggle, or slide; single pole with soft tap or other quiet switch; electromagnetic filter to eliminate noise, RF, and TV interference; and 5-inch wire connecting leads.
 3. Fluorescent Lamp Dimmers: Modular; compatible with dimmer ballasts; trim potentiometer to adjust low-end dimming; dimmer-ballast combination capable of consistent dimming to a maximum of 1 percent of full brightness.
- F. Single and combination wall plates to match corresponding wiring devices.
 1. Plate-Securing Screws: Metal with head color to match plate finish.
 2. Material for Finished Spaces: Steel with wrinkled finish, white baked enamel, suitable for field painting.
 3. Material for Unfinished Spaces: Galvanized steel.

2.5 ELECTRICAL IDENTIFICATION

- A. Identification Devices: A single type of identification product for each application category. Use colors prescribed by ANSI A13.1, NFPA 70, and these Specifications.
- B. Raceway and Cable Labels: Comply with ANSI A13.1, Table 3, for minimum size of letters for legend and minimum length of color field for each raceway and cable size.
 1. Type: Preprinted, flexible, self-adhesive, vinyl. Legend is overlaminated with a clear, weather- and chemical-resistant coating.
 2. Color: Black letters on orange background.
 3. Legend: Indicates voltage.
- C. Colored Adhesive Marking Tape for Raceways, Wires, and Cables: Self-adhesive vinyl tape, not less than 1 inch wide by 3 mils thick.
- D. Underground Warning Tape: Permanent, bright-colored, continuous-printed, vinyl tape with the following features:
 1. Not less than 6 inches wide by 4 mils thick.
 2. Compounded for permanent direct-burial service.
 3. Embedded continuous metallic strip or core.
 4. Printed legend that indicates type of underground line.
- E. Tape Markers for Wire: Vinyl or vinyl-cloth, self-adhesive, wraparound type with preprinted numbers and letters.
- F. Color-Coding Cable Ties: Type 6/6 nylon, self-locking type. Colors to suit coding scheme.

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- G. Engraved-Plastic Labels, Signs, and Instruction Plates: Engraving stock, melamine plastic laminate punched or drilled for mechanical fasteners 1/16-inch minimum thickness for signs up to 20 sq. in. and 1/8-inch minimum thickness for larger sizes. Engraved legend in black letters on white background.
- H. Interior Warning and Caution Signs: Comply with 29 CFR, Chapter XVII, Part 1910.145. Preprinted, aluminum, baked-enamel-finish signs, punched or drilled for mechanical fasteners, with colors, legend, and size appropriate to the application.
- I. Exterior Warning and Caution Signs: Comply with 29 CFR, Chapter XVII, Part 1910.145. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch, galvanized-steel backing, with colors, legend, and size appropriate to the application. 1/4-inch grommets in corners for mounting.
- J. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32 stainless-steel machine screws with nuts and flat and lock washers.

2.6 EQUIPMENT FOR ELECTRICITY METERING BY OWNER

NOT REQUIRED

2.7 CONCRETE BASES

NOT REQUIRED

2.8 TOUCHUP PAINT

- A. For Equipment: Equipment manufacturer's paint selected to match installed equipment finish.
- B. Galvanized Surfaces: Zinc-rich paint recommended by item manufacturer.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

- A. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide the maximum possible headroom.
- B. Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.
- C. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.

- D. Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 RACEWAY APPLICATION

- A. Use the following raceways for outdoor installations:
 - 1. Exposed: IMC.
 - 2. Concealed: IMC.
 - 3. Underground, Single Run: RNC.
 - 4. Underground, Grouped: RNC.
 - 5. Connection to Vibrating Equipment: LFMC.
 - 6. Boxes and Enclosures: NEMA 250, Type 3R or Type 4.
- B. Use the following raceways for indoor installations:
 - 1. Exposed: EMT. Utility areas and plenums only.
 - 2. Exposed replacement of existing wiremold: Surface Metal Raceway
 - 3. Concealed: EMT.
 - 4. Connection to Vibrating Equipment: FMC; except in wet or damp locations, use LFMC.
 - 5. Damp or Wet Locations: IMC.
 - 6. Boxes and Enclosures: NEMA 250, Type 1, unless otherwise indicated.

3.3 RACEWAY AND CABLE INSTALLATION

- A. Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors.
- B. Install raceways and cables at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Locate horizontal raceway runs above water and steam piping.
- C. Use temporary raceway caps to prevent foreign matter from entering.
- D. Make conduit bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.
- E. Use raceway and cable fittings compatible with raceways and cables and suitable for use and location.
- F. Install raceways embedded in slabs in middle third of slab thickness where practical, and leave at least 1-inch concrete cover.
 - 1. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.
 - 2. Space raceways laterally to prevent voids in concrete.
 - 3. Install conduit larger than 1-inch trade size parallel to or at right angles to main reinforcement. Where conduit is at right angles to reinforcement, place conduit close to slab support.

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4. Transition from nonmetallic tubing to Schedule 80 nonmetallic conduit, rigid steel conduit, or IMC before rising above floor.
 5. Make bends in exposed parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for exposed parallel raceways.
- G. Install pull wires in empty raceways greater than 10 feet in length. Use No. 14 AWG zinc-coated steel or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of the pull wire.
 - H. Install telephone and signal system raceways, 2-inch trade size and smaller, in maximum lengths of 100 feet and with a maximum of two 90-degree bends or equivalent. Separate lengths with pull or junction boxes where necessary to comply with these requirements, in addition to requirements above.
 - I. Connect motors and equipment subject to vibration, noise transmission, or movement with a maximum of 72-inch flexible conduit. Install LFMC in wet or damp locations. Install separate ground conductor across flexible connections.
 - J. Set floor boxes level and trim after installation to fit flush to finished floor surface.

3.4 WIRING METHODS FOR POWER, LIGHTING, AND CONTROL CIRCUITS

- A. Feeders: Type XHHW-2 insulated conductors in raceway.
- B. Branch Circuits: Type THW or THHN/THWN insulated conductors in raceway where exposed. Metal-clad cable where concealed in ceilings and gypsum board partitions.
- C. Remote-Control Signaling and Power-Limited Circuits: Type THHN/THWN insulated conductors in raceway for Classes 1, 2, and 3, unless otherwise indicated.

3.5 WIRING & DEVICES INSTALLATION

- A. Install splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- B. Install wiring at outlets with at least 8 inches of slack conductor at each outlet.
- C. Connect outlet and component connections to wiring systems and to ground. Tighten electrical connectors and terminals, according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A.
- D. Install wall plates when painting is complete.
- E. Install wall dimmers to achieve indicated rating after derating for ganging as instructed by manufacturer.
- F. Do not share neutral conductor on load side of dimmers.

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- G. Connect wiring device grounding terminal to branch-circuit equipment grounding conductor or to grounded box with a bonding jumper.
- H. Tighten electrical connectors and terminals according to manufacturers published torque-tightening values. If manufacturers torque values are not indicated, use those specified in UL 486A and UL 486B.

3.6 ELECTRICAL SUPPORTING DEVICE APPLICATION

- A. Damp Locations and Outdoors: Hot-dip galvanized materials or nonmetallic, U-channel system components.
- B. Dry Locations: Steel materials.
- C. Support Clamps for PVC Raceways: Click-type clamp system.
- D. Selection of Supports: Comply with manufacturer's written instructions.
- E. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four; minimum of 200-lb design load.

3.7 SUPPORT INSTALLATION

- A. Install support devices to securely and permanently fasten and support electrical components.
- B. Install individual and multiple raceway hangers and riser clamps to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assemblies and for securing hanger rods and conduits.
- C. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.
- D. Size supports for multiple raceway installations so capacity can be increased by a 25 percent minimum in the future.
- E. Support individual horizontal raceways with separate, malleable-iron pipe hangers or clamps.
- F. Install 1/4-inch-diameter or larger threaded steel hanger rods, unless otherwise indicated.
- G. Spring-steel fasteners specifically designed for supporting single conduits or tubing may be used instead of malleable-iron hangers for 1-1/2-inch and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings and for fastening raceways to slotted channel and angle supports.
- H. Arrange supports in vertical runs so the weight of raceways and enclosed conductors is carried entirely by raceway supports, with no weight load on raceway terminals.

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- I. Simultaneously install vertical conductor supports with conductors.
- J. Separately support cast boxes that are threaded to raceways and used for fixture support. Support sheet-metal boxes directly from the building structure or by bar hangers. If bar hangers are used, attach bar to raceways on opposite sides of the box and support the raceway with an approved fastener not more than 24 inches from the box.
- K. Install metal channel racks for mounting cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices unless components are mounted directly to structural elements of adequate strength.
- L. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.
- M. Securely fasten electrical items and their supports to the building structure, unless otherwise indicated. Perform fastening according to the following unless other fastening methods are indicated:
 - 1. Wood: Fasten with wood screws or screw-type nails.
 - 2. Masonry: Toggle bolts on hollow masonry units and expansion bolts on solid masonry units.
 - 3. New Concrete: Concrete inserts with machine screws and bolts.
 - 4. Existing Concrete: Expansion bolts.
 - 5. Instead of expansion bolts, threaded studs driven by a powder charge and provided with lock washers may be used in existing concrete.
 - 6. Steel: Welded threaded studs or spring-tension clamps on steel.
 - a. Field Welding: Comply with AWS D1.1.
 - 7. Welding to steel structure may be used only for threaded studs, not for conduits, pipe straps, or other items.
 - 8. Light Steel: Sheet-metal screws.
 - 9. Fasteners: Select so the load applied to each fastener does not exceed 25 percent of its proof-test load.

3.8 IDENTIFICATION MATERIALS AND DEVICES

- A. Install at locations for most convenient viewing without interference with operation and maintenance of equipment.
- B. Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.
- C. Self-Adhesive Identification Products: Clean surfaces before applying.
- D. Identify raceways and cables with color banding as follows:

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1. Bands: Pretensioned, snap-around, colored plastic sleeves or colored adhesive marking tape. Make each color band 2 inches wide, completely encircling conduit, and place adjacent bands of two-color markings in contact, side by side.
 2. Band Locations: At changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.
 3. Colors: As follows:
 - a. Fire Alarm System: Red.
 - b. Security System: Blue and yellow.
 - c. Telecommunication System: Green and yellow.
- E. Tag and label circuits designated to be extended in the future. Identify source and circuit numbers in each cabinet, pull and junction box, and outlet box. Color-coding may be used for voltage and phase identification.
- F. Install continuous underground plastic markers during trench backfilling, for exterior underground power, control, signal, and communication lines located directly above power and communication lines. Locate 6 to 8 inches below finished grade. If width of multiple lines installed in a common trench or concrete envelope does not exceed 16 inches, overall, use a single line marker.
- G. Color-code 208/120-V system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:
1. Phase A: Black.
 2. Phase B: Red.
 3. Phase C: Blue.
 4. Neutral: White.
 5. Ground: Green.
- H. Install warning, caution, and instruction signs where required to comply with 29 CFR, Chapter XVII, Part 1910.145, and where needed to ensure safe operation and maintenance of electrical systems and of items to which they connect. Install engraved plastic-laminated instruction signs with approved legend where instructions are needed for system or equipment operation. Install metal-backed butyrate signs for outdoor items.

3.9 FIRESTOPPING

- A. Apply firestopping to cable and raceway penetrations of fire-rated floor and wall assemblies to achieve fire-resistance rating of the assembly. Firestopping systems shall be as follows:
1. Firestopping Materials: Provide firestopping system(s) of sufficient thickness, width and density to provide and maintain a fire resistance rating.

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2. Provide a seal completely filling all annular spaces to prevent the passage of flame, smoke and gases through the opening in the fire separation in which it is installed.
3. Material Compatibility: Provide materials which are compatible with all materials used in the system including materials used in or on penetrating items as well as all construction materials used in conjunction or contiguous with the system.
4. Accessories: Provide components for each firestopping system that are needed to install fill materials. Use only components specified by the firestopping manufacturer and approved by the qualified testing and inspecting agency for the designated fire resistance rated systems. Accessories include but are not limited to the following items:

Permanent forming/damming/backing materials, temporary forming materials, substrate primers, collars, steel sleeves.

B. Acceptable firestopping system manufacturers:

1. Provide firestopping silicone sealants, water-based sealants, intumescent sealant, mortars, or firestop devices from the following manufacturer:

A/D Fire Protection Systems Inc.

Or Approved Alternative

C. Acceptable firestopping materials:

1. Provide a complete system of asbestos-free firestop systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of ASTM E814, ANSI/UL 1479 or ANSI/UL 2079 and listed by UL or FM and in addition are approved by jurisdictional authorities.
2. A/D FIREBARRIER Silicone Sealants: For use in: openings with penetrating items subject to high movement or multiple penetration systems.
3. A/D FIREBARRIER Intumescent Caulk: For general use as a firestop sealant with electrical cables and conduit.
4. A/D FIREBARRIER Seal and Seal NS: Water based firestop sealants for use with: multiple penetration systems; electrical; and where sprayed sealant application is required or desired.
5. A/D FIREBARRIER Mortar: For use in: large openings; static non-moving penetrations such as cable trays; for multiple penetration systems; electrical and communication bundles; conduits; and non-combustible sleeves.
6. A/D FIREBARRIER Pillows: For use in openings with: cable tray; multiple cable penetrations; where retrofitting of penetrating items is anticipated; and as a temporary firestop system.
7. Firestop system ratings: Comply with applicable Building Code requirements for locations and ratings.

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3.10 CONCRETE BASES

NOT REQUIRED

3.11 DEMOLITION

- A. Protect existing electrical equipment and installations indicated to remain. Temporarily route, terminate and protect all circuit conductors per NFPA-70 requirements for live circuits where existing electrical equipment and installations are not being immediately re-installed. If damaged or disturbed in the course of the Work, remove damaged portions and install new products of equal capacity, quality, and functionality.
- B. Accessible Work: Remove exposed electrical equipment and installations, indicated to be demolished, in their entirety.
- C. Abandoned Work: Cut and remove buried raceway and wiring, indicated to be abandoned in place, 2 inches below the surface of adjacent construction. Cap raceways and patch surface to match existing finish.
- D. Remove demolished material from Project site.
- E. Remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation.

3.12 CUTTING AND PATCHING

- A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.
- B. Repair and refinish disturbed finish materials and other surfaces to match adjacent undisturbed surfaces. Install new fireproofing where existing firestopping has been disturbed. Repair and refinish materials and other surfaces by skilled mechanics of trades involved.

3.13 FIELD QUALITY CONTROL

- A. Inspect installed components for damage and faulty work, including the following:
 - 1. Raceways.
 - 2. Building wire and connectors.
 - 3. Supporting devices for electrical components.
 - 4. Electrical identification.
 - 5. Electricity-metering components.
 - 6. Concrete bases.
 - 7. Electrical demolition.
 - 8. Cutting and patching for electrical construction.
 - 9. Touchup painting.

SECTION 160500 - BASIC ELECTRICAL MATERIALS AND METHODS

- B. The electrical contractor shall be responsible for obtaining a third party inspection for all work associated with this contract, and shall submit to the engineer, a certificate of compliance with all codes having jurisdiction.

3.14 REFINISHING AND TOUCHUP PAINTING

- A. Refinish and touch up paint. Paint materials and application requirements are specified in Division 9 Section "Painting."
 - 1. Clean damaged and disturbed areas and apply primer, intermediate, and finish coats to suit the degree of damage at each location.
 - 2. Follow paint manufacturer's written instructions for surface preparation and for timing and application of successive coats.
 - 3. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 4. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

3.15 CLEANING AND PROTECTION

- A. On completion of installation, including outlets, fittings, and devices, inspect exposed finish. Remove burrs, dirt, paint spots, and construction debris.
- B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

3.16 THIRD PARTY INSPECTION

- A. Electrical Contractor shall obtain and pay for a third party electrical inspector to submit a certificate of inspection prior to final payment being issued by the District.

END OF SECTION

SECTION 22 05 00 – GENERAL REQUIREMENTS FOR PLUMBING

PART 1 - GENERAL

1.1 SUMMARY

A. Provide the following:

1. Piping materials and installation instructions common to most piping systems.
2. Dielectric fittings.
3. Mechanical sleeve seals.
4. Sleeves.
5. Escutcheons.
6. Grout.
7. Mechanical demolition.
8. Equipment installation requirements common to equipment sections.
9. Concrete bases.
10. Supports and anchorages.

1.2 DEFINITIONS

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspace, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.
- E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

1.3 SUBMITTALS

- A. Welding certificates.

1.4 QUALITY ASSURANCE

- A. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code--Steel."

SECTION 22 05 00 – GENERAL REQUIREMENTS FOR PLUMBING

- B. Steel Pipe Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
 - 1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
 - 2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- C. Electrical Characteristics for Mechanical Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.

1.5 PIPE, TUBE, AND FITTINGS

- A. Refer to individual piping Sections for pipe, tube, and fitting materials and joining methods.
- B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.

1.6 JOINING MATERIALS

- A. Refer to individual piping Sections for special joining materials not listed below.
- B. Pipe-Flange Gasket Materials: ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch (3.2-mm) maximum thickness unless thickness or specific material is indicated.
- C. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- D. Welding Filler Metals: Comply with AWS D10.12.

1.7 DIELECTRIC FITTINGS

- A. Description: Combination fitting of copper alloy and ferrous materials with threaded, solder-joint, plain, or weld-neck end connections that match piping system materials.
- B. Insulating Material: Suitable for system fluid, pressure, and temperature.
- C. Dielectric Unions: Factory-fabricated, union assembly, for 250-psig (1725-kPa) minimum working pressure at 180 deg F (82 deg C).
- D. Dielectric Flanges: Factory-fabricated, companion-flange assembly, for 150- or 300-psig (1035- or 2070-kPa) minimum working pressure as required to suit system pressures.
- E. Dielectric Couplings: Galvanized-steel coupling with inert and noncorrosive, thermoplastic lining; threaded ends; and 300-psig (2070-kPa) minimum working pressure at 225 deg F (107 deg C).

SECTION 22 05 00 – GENERAL REQUIREMENTS FOR PLUMBING

- F. Dielectric Nipples: Electroplated steel nipple with inert and noncorrosive, thermoplastic lining; plain, threaded, or grooved ends; and 300-psig (2070-kPa) minimum working pressure at 225 deg F (107 deg C).

1.8 MECHANICAL SLEEVE SEALS

- A. Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.
- B. Sealing Elements: EPDM interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
- C. Pressure Plates: Carbon steel. Include two for each sealing element.
- D. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

1.9 SLEEVES

- A. Galvanized-Steel Sheet: 0.0239-inch (0.6-mm) minimum thickness; round tube closed with welded longitudinal joint.
- B. Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends.
- C. Cast Iron: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- D. Stack Sleeve Fittings: Manufactured, cast-iron sleeve with integral clamping flange. Include clamping ring and bolts and nuts for membrane flashing.
 - 1. Underdeck Clamp: Clamping ring with set screws.

1.10 ESCUTCHEONS

- A. Description: Manufactured wall and ceiling escutcheons and floor plates, with an ID to closely fit around pipe, tube, and insulation of insulated piping and an OD that completely covers opening.
- B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with polished chrome-plated finish.
- C. Split-Casting, Cast-Brass Type: With concealed hinge and set screw.
 - 1. Finish: Polished chrome-plated.

1.11 GROUT

SECTION 22 05 00 – GENERAL REQUIREMENTS FOR PLUMBING

- A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
 - 1. Characteristics: Post-hardening, volume-adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
 - 2. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.
 - 3. Packaging: Premixed and factory packaged.

PART 2 - EXECUTION

2.1 PIPING SYSTEMS - COMMON REQUIREMENTS

- A. Install piping according to the following requirements and Sections specifying piping systems.
- B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- C. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.
- D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- F. Install piping to permit valve servicing.
- G. Install piping at indicated slopes.
- H. Install piping free of sags and bends.
- I. Install fittings for changes in direction and branch connections.
- J. Install piping to allow application of insulation.
- K. Select system components with pressure rating equal to or greater than system operating pressure.
- L. Install escutcheons for penetrations of walls, ceilings, and floors.
- M. Install sleeves for pipes passing through concrete and masonry walls, gypsum-board partitions, and concrete floor and roof slabs.

SECTION 22 05 00 – GENERAL REQUIREMENTS FOR PLUMBING

- N. Aboveground, Exterior-Wall Pipe Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
 - 1. Install steel pipe for sleeves smaller than 6 inches (150 mm) in diameter.
 - 2. Install cast-iron "wall pipes" for sleeves 6 inches (150 mm) and larger in diameter.
 - 3. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
- O. Underground, Exterior-Wall Pipe Penetrations: Install cast-iron "wall pipes" for sleeves. Seal pipe penetrations using mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
 - 1. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
- P. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Refer to Section 07840 "Firestopping" for materials.
- Q. Verify final equipment locations for roughing-in.
- R. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.

2.2 PIPING JOINT CONSTRUCTION

- A. Join pipe and fittings according to the following requirements and Sections specifying piping systems.
- B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- D. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.
- E. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
 - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.

SECTION 22 05 00 – GENERAL REQUIREMENTS FOR PLUMBING

2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- F. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

2.3 PIPING CONNECTIONS

- A. Make connections according to the following, unless otherwise indicated:
 1. Install unions, in piping NPS 2 (DN 50) and smaller, adjacent to each valve and at final connection to each piece of equipment.
 2. Install flanges, in piping NPS 2-1/2 (DN 65) and larger, adjacent to flanged valves and at final connection to each piece of equipment.
 3. Dry Piping Systems: Install dielectric unions and flanges to connect piping materials of dissimilar metals.
 4. Wet Piping Systems: Install dielectric coupling and nipple fittings to connect piping materials of dissimilar metals.

2.4 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

- A. Install equipment to allow maximum possible headroom unless specific mounting heights are not indicated.
- B. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.
- C. Install mechanical equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
- D. Install equipment to allow right of way for piping installed at required slope.

2.5 CONCRETE BASES

- A. Concrete Bases: Anchor equipment to concrete base according to equipment manufacturer's written instructions and according to seismic codes at Project.
 1. Construct concrete bases of dimensions indicated, but not less than 4 inches (100 mm) larger in both directions than supported unit.
 2. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch (450-mm) centers around the full perimeter of the base.
 3. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.

SECTION 22 05 00 – GENERAL REQUIREMENTS FOR PLUMBING

4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
5. Install anchor bolts to elevations required for proper attachment to supported equipment.
6. Install anchor bolts according to anchor-bolt manufacturer's written instructions.
7. Use 3000-psi (20.7-MPa), 28-day compressive-strength concrete and reinforcement as specified in Section "Cast-in-Place Concrete."

2.6 ERECTION OF METAL SUPPORTS AND ANCHORAGES

- A. Refer to Section "Metal Fabrications" for structural steel.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.
- C. Field Welding: Comply with AWS D1.1.

2.7 ERECTION OF WOOD SUPPORTS AND ANCHORAGES

- A. Cut, fit, and place wood grounds, nailers, blocking, and anchorages to support, and anchor mechanical materials and equipment.
- B. Select fastener sizes that will not penetrate members if opposite side will be exposed to view or will receive finish materials. Tighten connections between members. Install fasteners without splitting wood members.
- C. Attach to substrates as required to support applied loads.

2.8 GROUTING

- A. Mix and install grout for mechanical equipment base bearing surfaces, pump and other equipment base plates, and anchors.
- B. Clean surfaces that will come into contact with grout.
- C. Provide forms as required for placement of grout.
- D. Avoid air entrapment during placement of grout.
- E. Place grout, completely filling equipment bases.
- F. Place grout on concrete bases and provide smooth bearing surface for equipment.
- G. Place grout around anchors.
- H. Cure placed grout.

END OF SECTION

SECTION 233700 - AIR OUTLETS AND INLETS

PART 1 GENERAL

1. SUBMITTALS

- A. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

PART 2 PRODUCTS

1. RECTANGULAR CEILING DIFFUSERS

- A. Type: Provide square and rectangular, adjustable pattern diffuser to discharge air in 360 degree and four way pattern with sectorizing baffles where indicated.
- B. Accessories: Provide radial opposed blade volume control damper; removable core and wire guard with damper adjustable from diffuser face.

2. CEILING SUPPLY REGISTERS/GRILLES

- A. Type: Streamlined and individually adjustable curved blades to discharge air along face of grille, one-way deflection.
- B. Frame: 1-1/4 inch margin with countersunk screw mounting and gasket.
- C. Damper: Integral, gang-operated, opposed blade type with removable key operator, operable from face.

PART 3 EXECUTION

1. INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
- C. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.

END OF SECTION

SECTION 265100 - INTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Interior lighting fixtures, lamps, and ballasts.
 - 2. Emergency lighting units.
 - 3. Exit signs.
 - 4. Lighting fixture supports.

1.3 SUBMITTALS

- A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:
 - 1. Physical description of lighting fixture including dimensions.
 - 2. Emergency lighting units including battery and charger.
 - 3. Ballast.
 - 4. Energy-efficiency data.
 - 5. Life, output, and energy-efficiency data for lamps.
 - 6. Photometric data, in IESNA format, based on laboratory tests of each lighting fixture type, outfitted with lamps, ballasts, and accessories identical to those indicated for the lighting fixture as applied in this Project.
- B. Shop Drawings: Show details of nonstandard or custom lighting fixtures. Indicate dimensions, weights, methods of field assembly, components, features, and accessories.
 - 1. Wiring Diagrams: Power wiring.
- C. Field quality-control test reports.
- D. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.
- E. Warranties: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

SECTION 265100 - INTERIOR LIGHTING

- C. Comply with NFPA 70.

1.5 COORDINATION

- A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.

1.6 WARRANTY

- A. Special Warranty for LED Lighting Fixtures/Drivers: Manufacturer's standard form in which manufacturer of lighting unit agrees to repair or replace fixture or components that fail in materials or workmanship within ten years from date of Substantial Completion.
- B. Special Warranty for Emergency Lighting Batteries: Manufacturer's standard form in which manufacturer of battery-powered emergency lighting unit agrees to repair or replace components of rechargeable batteries that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period for Emergency Lighting Unit Batteries: 10 years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining nine years.
 - 2. Warranty Period for Emergency Fluorescent Ballast and Self-Powered Exit Sign Batteries: Seven years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining six years.
- C. Special Warranty for Ballasts: Manufacturer's standard form in which ballast manufacturer agrees to repair or replace ballasts that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period for Electronic Ballasts: Five years from date of Substantial Completion.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Lamps: 10 for every 100 of each type and rating installed. Furnish at least one of each type.
 - 2. Plastic Diffusers and Lenses: 1 for every 100 of each type and rating installed. Furnish at least one of each type.
 - 3. Battery and Charger Data: One for each emergency lighting unit.
 - 4. Ballasts: 1 for every 100 of each type and rating installed. Furnish at least one of each type.
 - 5. Globes and Guards: 1 for every 20 of each type and rating installed. Furnish at least one of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

SECTION 265100 - INTERIOR LIGHTING

- B. In Interior Lighting Fixture Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS

- A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.
- B. LED Fixtures: Comply with UL, IES LM-79 and IES LM-80.
- C. Metal Parts: Free of burrs and sharp corners and edges.
- D. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.
- E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
- F. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
1. White Surfaces: 85 percent.
 2. Specular Surfaces: 83 percent.
 3. Diffusing Specular Surfaces: 75 percent.
- G. Plastic Diffusers, Covers, and Globes:
1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
 - a. Lens Thickness: At least 0.125 inch minimum unless different thickness is indicated.
 - b. UV stabilized.
 2. Glass: Annealed crystal glass, unless otherwise indicated.

2.3 LED LIGHTING FIXTURES

- A. LED drivers shall include the following features unless otherwise indicated:
1. Minimum efficiency: 85% at full load.
 2. Minimum Operating Ambient Temperature: -20° C. (-4° F.)
 3. Input Voltage: 120 - 277V (±10%) at 60 Hz.
 4. Integral short circuit, open circuit, and overload protection.
 5. Power Factor: ≥ 0.9.
 6. Total Harmonic Distortion: ≤ 20%.
 7. Comply with FCC 47 CFR Part 15.
- B. LED modules shall include the following features unless otherwise indicated:
1. Comply with IES LM-79 and LM-80 requirements.
 2. Minimum CRI 80 and color temperature 4000° K unless otherwise specified in LIGHTING FIXTURE SCHEDULE.

SECTION 265100 - INTERIOR LIGHTING

3. Minimum Rated Life: 50,000 hours per IES L70.
4. Light output lumens as indicated in the LIGHTING FIXTURE SCHEDULE.

C. LED Downlights: Housing, LED driver, and LED module shall be products of the same manufacturer.

D. LED Troffers:

1. LED drivers, modules, and reflector shall be accessible, serviceable, and replaceable from below the ceiling.
2. Housing, LED driver, and LED module shall be products of the same manufacturer.

2.4 EXIT SIGNS

A. Description: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.

B. Internally Lighted Signs:

1. Lamps for AC Operation: LEDs, 70,000 hours minimum rated lamp life.
2. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
 - a. Battery: Sealed, maintenance-free, nickel-cadmium type.
 - b. Charger: Fully automatic, solid-state type with sealed transfer relay.
 - c. Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
 - d. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 - e. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
 - f. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

2.5 EMERGENCY LIGHTING UNITS

A. Description: Self-contained units complying with UL 924.

1. Battery: Sealed, maintenance-free, lead-acid type.
2. Charger: Fully automatic, solid-state type with sealed transfer relay.
3. Operation: Relay automatically turns lamp on when power supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
4. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
5. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
6. Integral Time-Delay Relay: Holds unit on for fixed interval of 15 minutes when power is restored after an outage.

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7. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

2.6 LIGHTING FIXTURE SUPPORT COMPONENTS

- A. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: **1/2-inch** steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.
- C. Twin-Stem Hangers: Two, **1/2-inch** steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
- D. Beam Clamp: Rod Size 3/8 In, Max Load Top Of Beam 500 and Bottom 250 Lb, Material of Construction Electro-Galvanized Malleable Iron, Length 3/4 In, Width 1 1/8 In, Standards Federal Specification WW-H-171 (Type 23), ANSI/MSS-SP-58 (Type 19 & 23)
- E. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, **12 gage**.
- F. Rod Hangers: **3/16-inch** minimum diameter, cadmium-plated, threaded steel rod.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Lighting fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.
- B. Support for Lighting Fixtures in or on Grid-Type Suspended Ceilings: Use grid as a support element.
 1. Install a minimum of four ceiling support system rods or wires for each fixture. Locate not more than **6 inches** from lighting fixture corners.
 2. Fixtures of Sizes Less Than Ceiling Grid: Install as indicated on reflected ceiling plans or center in acoustical panel, and support fixtures independently with at least two **3/4-inch** metal channels spanning and secured to ceiling tees.
- C. Suspended Lighting Fixture Support:
 1. Pendants and Rods: Where longer than **48 inches**, brace to limit swinging.
 2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
 3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.
- D. Adjust aimable lighting fixtures to provide required light intensities.
- E. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

SECTION 265100 - INTERIOR LIGHTING

3.2 FIELD QUALITY CONTROL

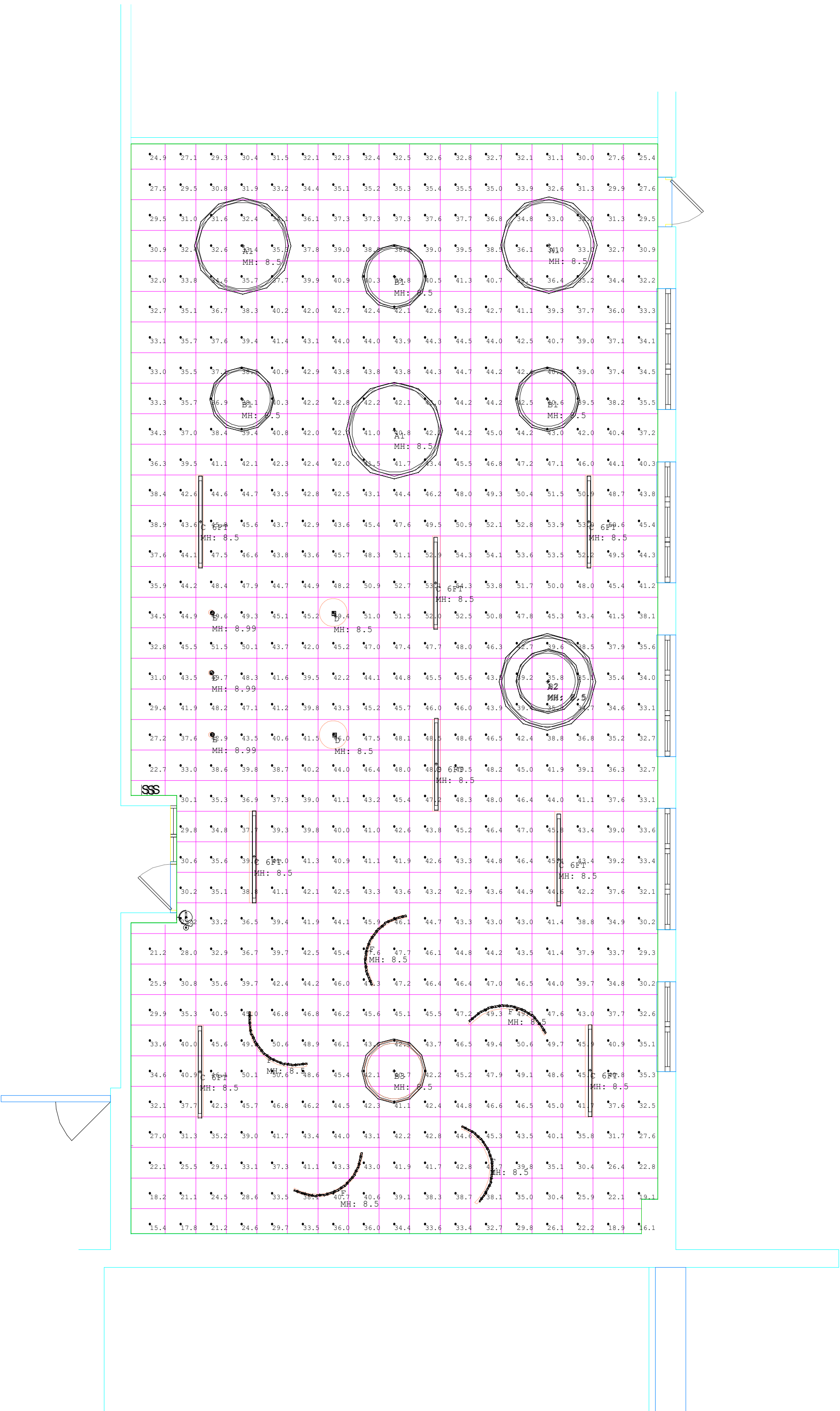
- A. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.
- B. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION 265100

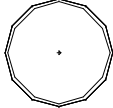
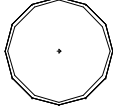
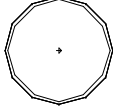
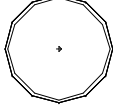
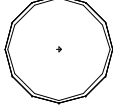
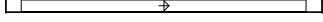
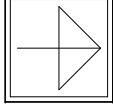
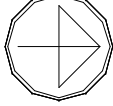
LUMENWERX

Lighting Calculation - Etude Photometrique

Charles E. Schwarting Elementary School



Luminaire Schedule

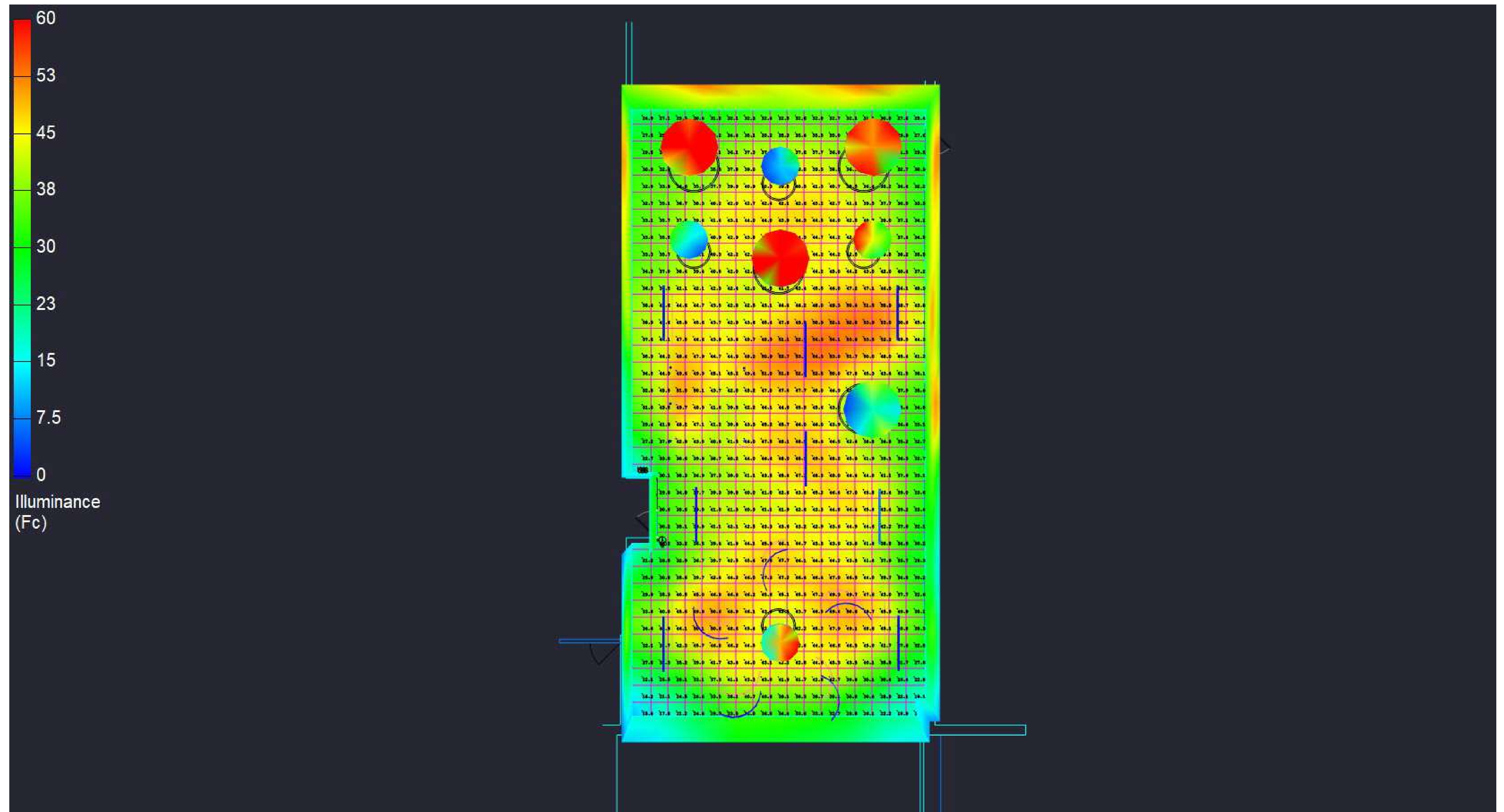
Symbol	Qty	Label	Description	Mounting	Height
	3	A1	ELIRP-72-ULO-SW-90-15000-40		8.5
	1	A2	ELIRP-72-ULO-SW-90-15000-40		8.5
	3	B1	RIMVA-48-SW-ULO-90-8000-40		8.5
	1	B2	RIMVA-48-SW-ULO-90-8000-40		8.5
	1	B3	RIMVA-48-SW-ULO-90-8000-40		8.5
	8	C 6FT	CAV-RLO-LED-80-750-40-6FT		8.5
	2	D	CLUP22ACO-TMW-MF01-SW-SOF-90-811		8.5
	3	E	AE3RRB-SW-50-90-40-SDL-10W		8.99
	5	F	RIMOSYSP-1R36(A120)-ULO-SW-90CRI-640LMF-40KUNV-D1-1C-RDB-W-POC-MC-18IN-CF-CHERRY		8.5

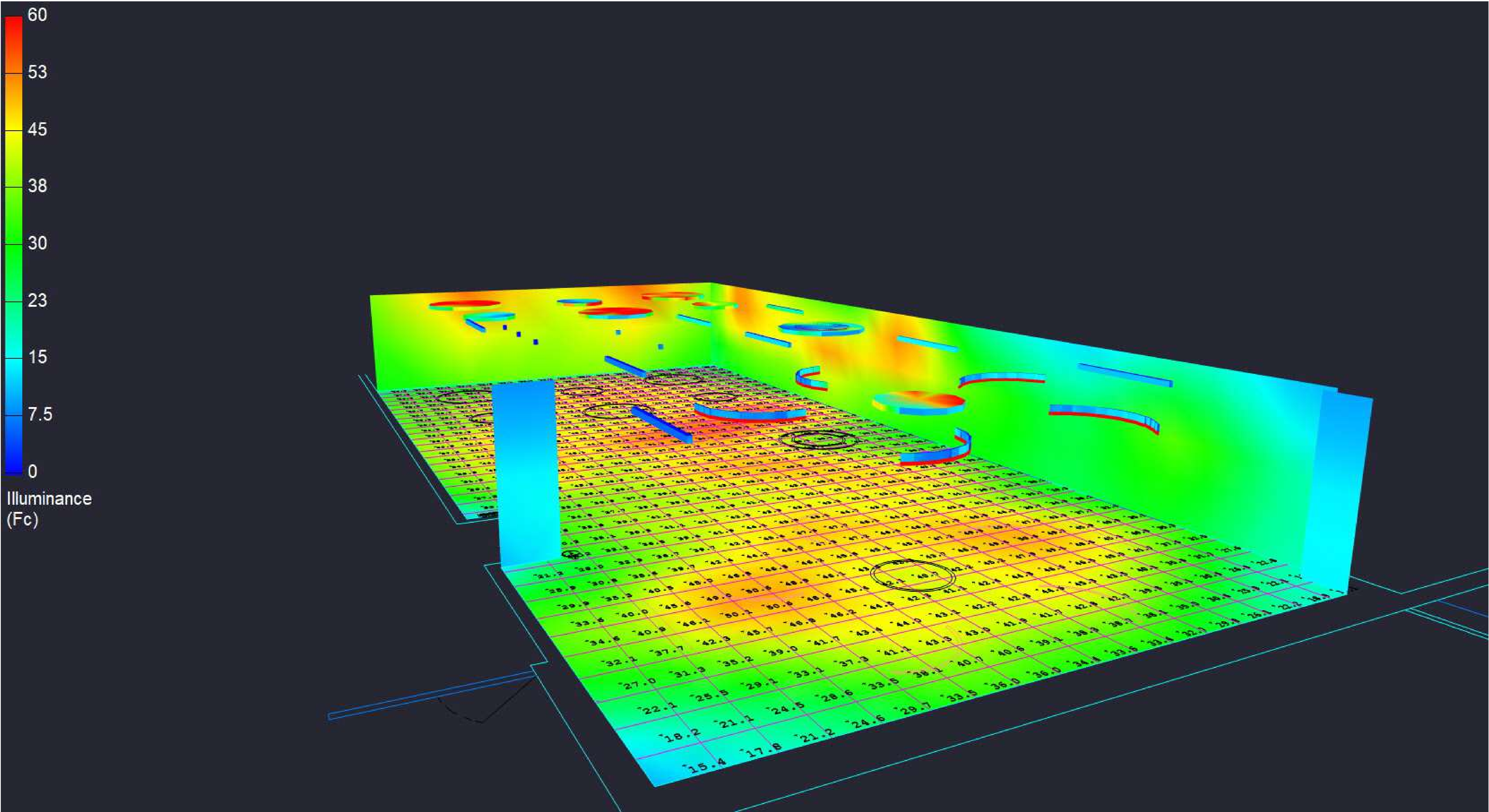
Notes

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Room_1_Floor	Illuminance	Fc	40.17	54.3	15.4	2.61	3.53

Notes





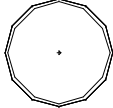
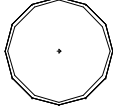
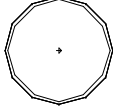
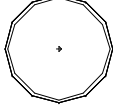
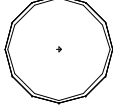
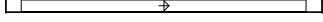
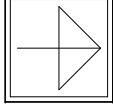
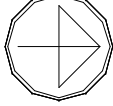
LUMENWERX

Lighting Calculation • Étude Photométrique

Eastplain Elementary School



Luminaire Schedule

Symbol	Qty	Label	Description	Mounting	Height
	3	A1	ELIRP-72-ULO-SW-90-15000-40		8.5
	1	A2	ELIRP-72-ULO-SW-90-15000-40		8.5
	3	B1	RIMVA-48-SW-ULO-90-8000-40		8.5
	1	B2	RIMVA-48-SW-ULO-90-8000-40		8.5
	1	B3	RIMVA-48-SW-ULO-90-8000-40		8.5
	8	C 6FT	CAV-RLO-LED-80-750-40-6FT		8.99
	2	D	CLUP22ACO-TMW-MF01-SW-SOF-90-811		8.5
	3	E	AE3RRB-SW-50-90-40-SDL-10W		8.99
	5	F	RIMOSYSP-1R36(A120)-ULO-SW-90CRI-640LMF-40KUNV-D1-1C-RDB-W-POC-MC-18IN-CF-CHERRY		8.5

Notes

Project Name / Nom de Projet : Eastplain Elementary School V4

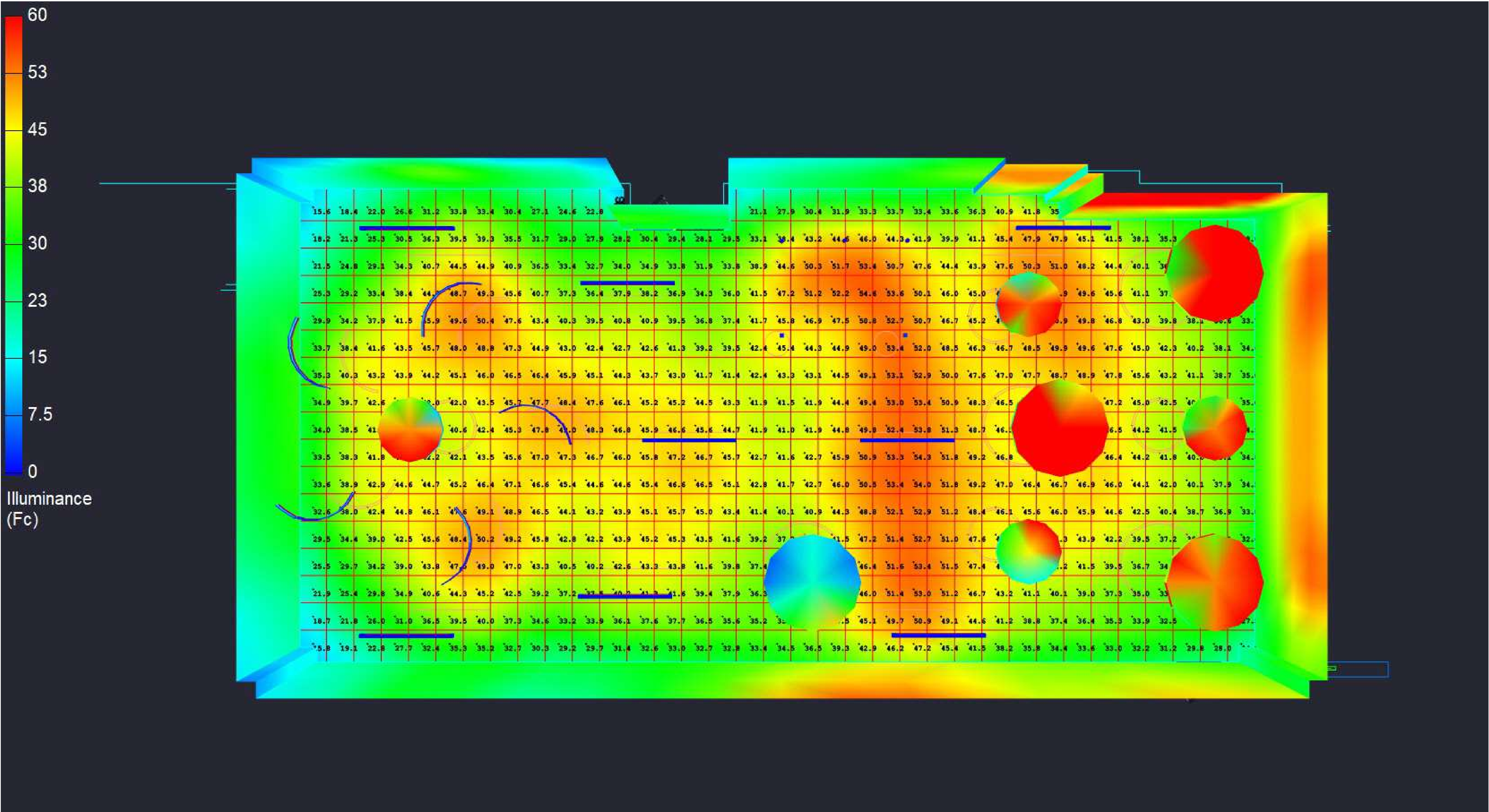
RESPONSABILITY DENIAL: The calculations are performed in accordance with the standards and practices of the IES. There may be a difference between the measured and calculated values. This difference is due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and site conditions. The data used to perform the calculations, as well as the dimensions of the room, reflectances, furnishings and architectural elements affect the lighting dynamics significantly. If the actual conditions in the environment do not match the data, there could be significant differences in results.

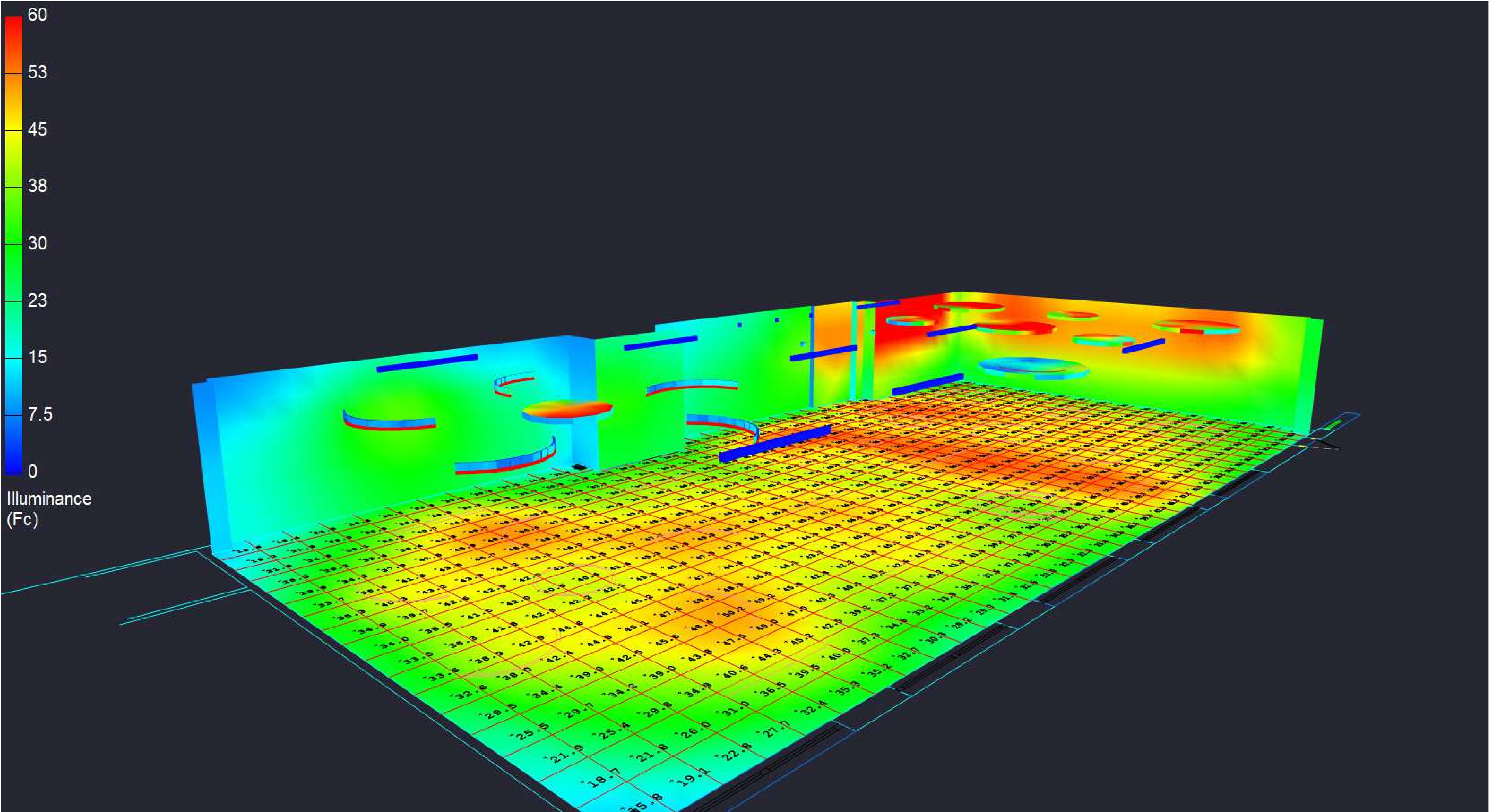
For / Pour : Mark Design Studios Architecture

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Room_1_Floor	Illuminance	Fc	41.05	54.6	15.6	2.63	3.50

Notes

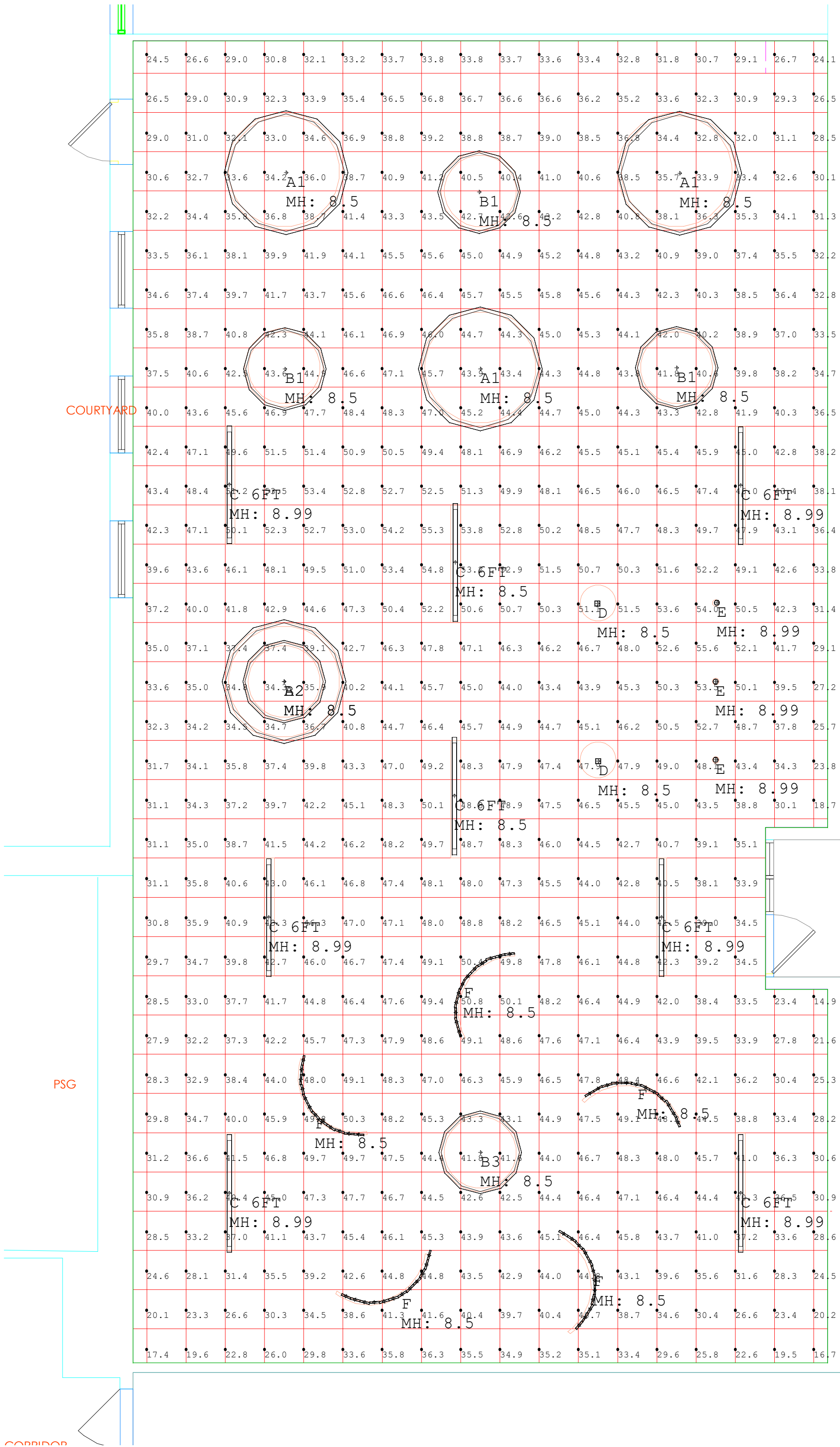




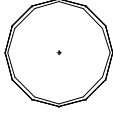
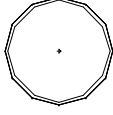
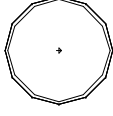
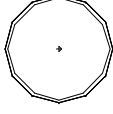
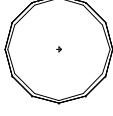
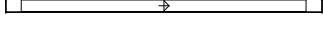
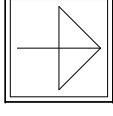
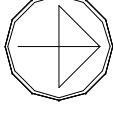
LUMENWERX

Lighting Calculation • Étude Photométrique

John H. West Elementary School



Luminaire Schedule

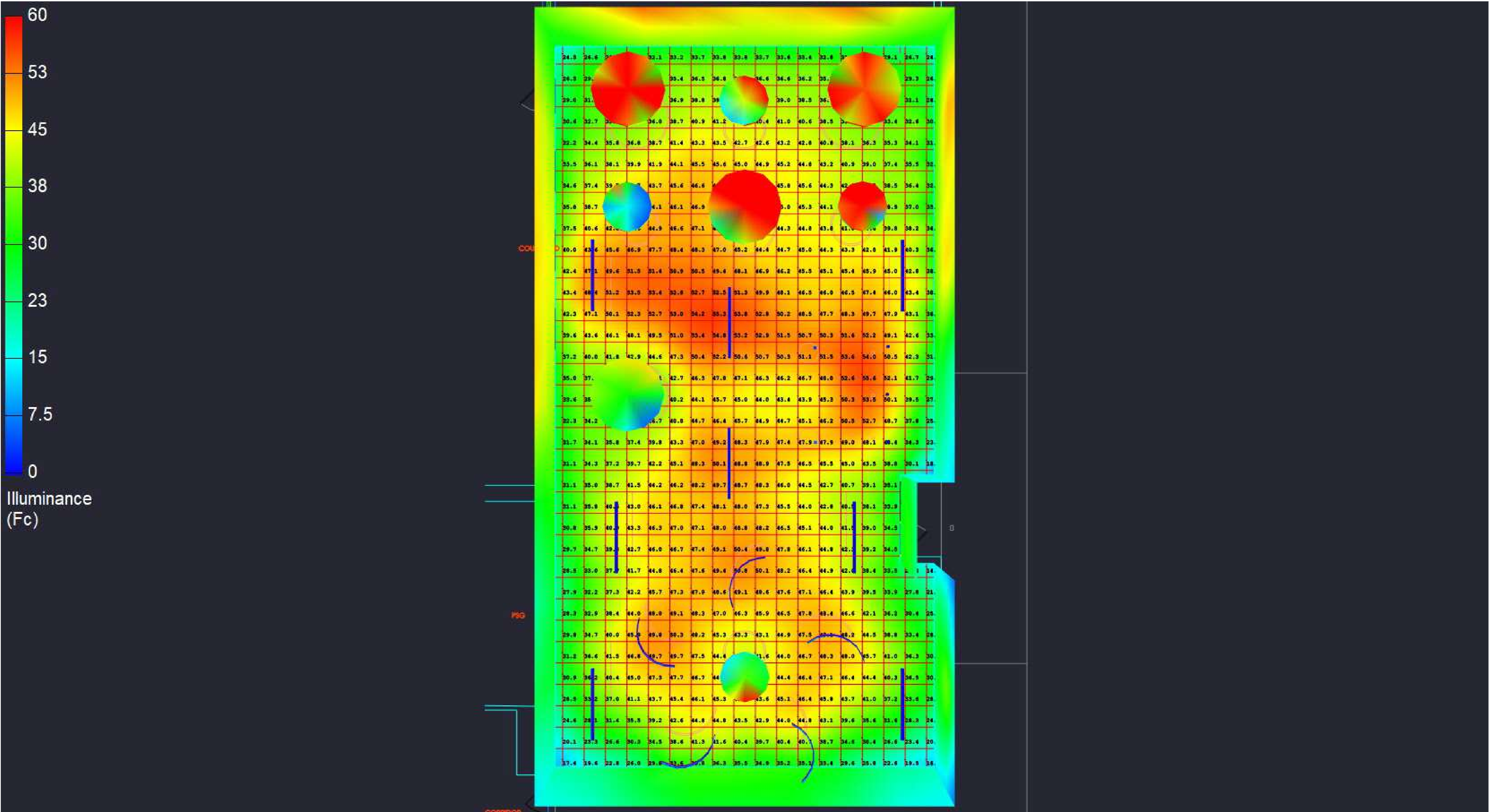
Symbol	Qty	Label	Description	Mounting	Height
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	1	A2	ELIRP-72-ULO-SW-90-15000-40		8.5
	3	B1	RIMVA-48-SW-ULO-90-8000-40		8.5
	1	B2	RIMVA-48-SW-ULO-90-8000-40		8.5
	1	B3	RIMVA-48-SW-ULO-90-8000-40		8.5
	8	C 6FT	CAV-RLO-LED-80-750-40-6FT		8.5, 8.99
	2	D	CLUP22ACO-TMW-MF01-SW-SOF-90-811		8.5
	3	E	AE3RRB-SW-50-90-40-SDL-10W		8.99
	5	F	RIMOSYSP-1R36(A120)-ULO-SW-90CRI-640LMF-40KUNV-D1-1C-RDB-W-POC-MC-18IN-CF-CHERRY		8.5

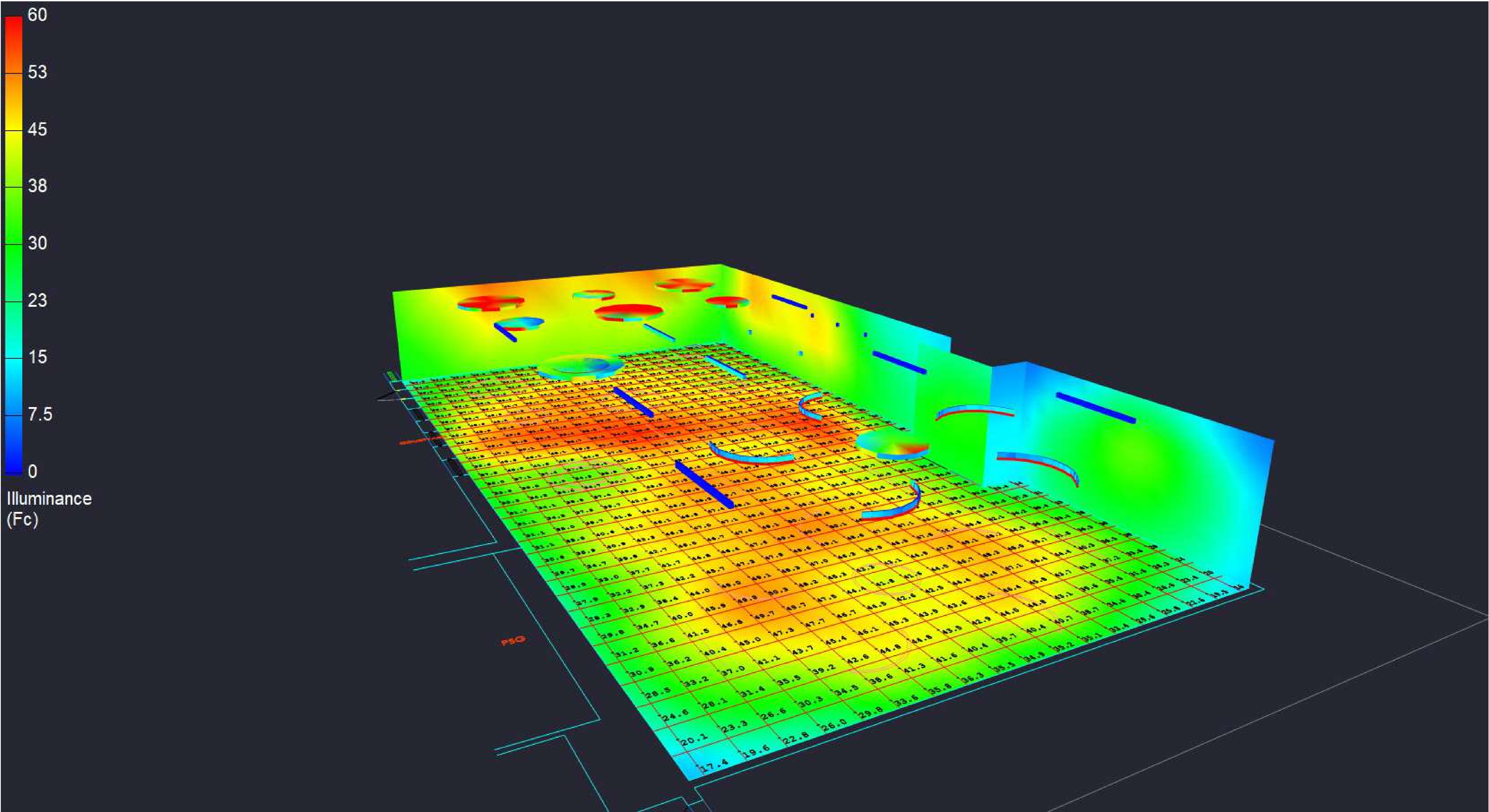
Notes

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Room_1_Floor	Illuminance	Fc	40.99	55.6	14.9	2.75	3.73

Notes





DRAWING INDEX

PLAINEDGE UNION FREE SCHOOL DISTRICT

LIBRARY MEDIA CENTER RENOVATIONS
JOHN H. WEST ELEMENTARY SCHOOL, CHARLES E. SCHWARTING ELEMENTARY SCHOOL,
EASTPLAIN ELEMENTARY SCHOOL, PLAINEDGE MIDDLE SCHOOL

<u>DRAWING NO</u>	<u>TITLE</u>
T-001	COVER SHEET
T-002	GENERAL NOTES
T-003	ADA DIAGRAMS
A-010	JOHN H. WEST ELEMENTARY SCHOOL - CODE COMPLIANCE PLAN
A-020	CHARLES E. SCHWARTING ELEMENTARY SCHOOL - CODE COMPLIANCE PLAN
A-030	EASTPLAIN ELEMENTARY SCHOOL - CODE COMPLIANCE PLAN
A-040	PLAINEDGE MIDDLE SCHOOL - CODE COMPLIANCE PLAN
<u>JOHN H. WEST ELEMENTARY SCHOOL</u>	
A-100	DEMOLITION FLOOR PLAN
A-101	DEMOLITION REFLECTED CEILING PLAN
A-110	CONSTRUCTION FLOOR PLAN
A-111	CONSTRUCTION FINISH PLAN
A-112	CONSTRUCTION FURNITURE PLAN
A-150	CONSTRUCTION REFLECTED CEILING PLAN
A-160	ELEVATIONS & RENDERINGS
E-100	ELECTRICAL POWER PLAN
<u>CHARLES E. SCHWARTING ELEMENTARY SCHOOL</u>	
A-200	DEMOLITION FLOOR PLAN
A-201	DEMOLITION REFLECTED CEILING PLAN
A-210	CONSTRUCTION FLOOR PLAN
A-211	CONSTRUCTION FINISH PLAN
A-212	CONSTRUCTION FURNITURE PLAN
A-250	CONSTRUCTION REFLECTED CEILING PLAN
A-260	ELEVATIONS & RENDERINGS
E-200	ELECTRICAL POWER PLAN
<u>EASTPLAIN ELEMENTARY SCHOOL</u>	
A-300	DEMOLITION FLOOR PLAN
A-301	DEMOLITION REFLECTED CEILING PLAN
A-310	CONSTRUCTION FLOOR PLAN
A-311	CONSTRUCTION FINISH PLAN
A-312	CONSTRUCTION FURNITURE PLAN
A-350	CONSTRUCTION REFLECTED CEILING PLAN
A-360	ELEVATIONS & RENDERINGS
E-300	ELECTRICAL POWER PLAN
<u>PLAINEDGE MIDDLE SCHOOL</u>	
A-400	DEMOLITION FLOOR PLAN
A-401	DEMOLITION REFLECTED CEILING PLAN
A-410	CONSTRUCTION FLOOR PLAN
A-411	CONSTRUCTION FINISH PLAN
A-412	CONSTRUCTION FURNITURE PLAN
A-450	CONSTRUCTION REFLECTED CEILING PLAN
A-451	ENLARGED LIGHTING PLAN AND SOFFIT DETAILS
A-460	ELEVATIONS & RENDERINGS
A-800	CEILING DETAILS AND PARTITION DETAILS
A-801	DOOR SCHEDULES AND DETAILS
A-900	MILLWORK DETAILS
A-901	MILLWORK DETAILS (CONT.)