Project Manual

For construction contracts greater than $20,000

Studio A Renovation

SU-071321

November 3, 2021

State University of New York Purchase College
735 Anderson Hill Road
Purchase, New York 10577-1402
Sheli Taylor, Associate Director of Contracts & Procurement Services

Project Number: SU-071321 Date: 6/30/2021
Project Name: Studio A Renovation
Agency/Div. Code: SUNY Purchase College 28260 Contract No. D990120

Bidding Documents

Division 14 – protection of Existing Structures, Vegetation and Utilities
Division 15 – Abbreviations and References
Division 16 – Use of Elevators
Division 17- Salvage of Materials
Division 18- Storage of Materials
Division 19- Shop Drawings and Samples
Division 20- U.S. Steel
Division 21- Non-Asbestos Products
Division 22- Material Safety and Data Sheet
Division 23- Architect's/Engineer's Seal
Division 24- Construction Permit
Division 25- Other Contracts
Division 26- Asbestos
Division 27- Wages Rates & Supplements.

Special Conditions for Construction at Purchase College……Pages 1- 10

Technical Specifications:

024119 SELECTIVE DEMOLITION
036100 GROUTING
051210 STRUCTURAL STEEL
061053 CARPENTRY
07250 SPRAYED FIRE-RESISTIVE MATERIALS
075216 MODIFIED BITUMEN ROOFING
078413 FIRESTOPS AND SMOKESEALS
079200 JOINT SEALANTS
081100 METAL DOORS
083116 ACCESS DOORS
087100 FINISH HARDWARE
090500 ACOUSTICAL CEILINGS
092900 GYPSUM DRYWALL
098100 ACOUSTIC INSULATION
098400 ACOUSTIC ROOM COMPONENTS
099113 PAINTING
265113 INTERIOR LIGHTING

List of Drawings:

A-001 COVER SHEET
A-101 AS BUILT & DEMOLITION PLAN
A-102 RAISED PLATFORM PLAN
A-103 AUDIO TROUGH & PIPING PLAN
A-104 CONSTRUCTION PLAN
A-105 FINISH PLAN
A-106 ELECTRICAL PLAN
A-107 EQUIPMENT PLAN
A-201 REFLECTED CEILING PLAN
A-202 REFLECTED SOFFIT FRAMING
A-203 REFLECTED CEILING FRAMING
A-301 SECTIONS & ELEVATIONS
A-401 DETAILS - SHELL CONSTRUCTION
A-402 DETAILS - MISC
A-403 TROUGH & PIPING DETAILS

A-404 TROUGH & PIPING DETAILS
A-405 DETAILS - ACOUSTIC TREATMENTS
A-406 DETAILS - ACOUSTIC TREATMENTS
A-407 DETAILS - ACOUSTIC TREATMENTS
A-408 DETAILS - ACOUSTIC TREATMENTS
A-409 DETAILS - ACOUSTIC TREATMENTS
A-410 DETAILS - ACOUSTIC TREATMENTS
A-411 DETAILS - ACOUSTIC TREATMENTS
A-601 DOOR SCHEDULE
A-602 DETAILS - DOORS
A-603 DETAILS - WINDOWS
A-604 DETAILS - WINDOWS
M-001 MECHANICAL SYMBOL LIST, NOTES & ABBREVIATIONS
M-002 MECHANICAL SPECIFICATIONS (SHEET 1)
M-003 MECHANICAL SPECIFICATIONS (SHEET 2)
M-100 MECHANICAL DEMOLITION PLAN
M-101 MECHANICAL CONSTRUCTION PLAN
M-102 MECHANICAL ROOF PLAN
M-200 MECHANICAL ELEVATIONS
M-300 MECHANICAL DETAILS
M-400 MECHANICAL SCHEDULES
E-001 ELECTRICAL SYMBOLS LIST, ABBREVIATIONS, LIGHTING SCHEDULE, ENERGY CODE COMPLIANCE TABLE, GENERAL NOTES AND DRAWING LIST
E-002 ELECTRICAL SUB-BASEMENT PLAN
E-003 ELECTRICAL PLAZA LEVEL PLAN
E-100 ELECTRICAL DEMOLITION PLAN
E-101 ELECTRICAL POWER PLAN
E-102 ELECTRICAL LIGHTING PLAN
E-103 ELECTRICAL ROOF PLAN
E-200 ELECTRICAL PANEL SCHEDULES
E-300 ELECTRICAL DETAILS (SHEET 1)
E-301 ELECTRICAL DETAILS (SHEET 2)
E-302 ELECTRICAL DETAILS (SHEET 3)
E-400 ELECTRICAL SPECIFICATIONS
FA-001 FIRE ALARM SYMBOLS LIST, MATRIX, DEVICE MOUNTING DETAIL, RISER DIAGRAM, GENERAL NOTES AND DRAWING LIST.
FA-100 FIRE ALARM PLAZA LEVEL AND STUDIO A PLANS
S-001 STRUCTURAL NOTES
S-101 PROPOSED ADDITION TO EXIST. FRAMING PLAN
S-301 ENLARGED DETAILS

State University of New York Construction Agreement

Summary

Article I
General Provisions

Article II
Contract Administration and Conduct

Article III
Time of Performance

Article IV
Payment

Attachments – Terms, Conditions

1. Schedule I, II, III (Schedule I Unit Prices, Schedule II Allowances, Schedule III Field Order Allowances)
2. Exhibit A Standard Contract Clauses
3. Exhibit A-1 Affirmative Action Clauses

Attachments –Contractor Documentation

4. Form 7554-07 – Contractor Proposal
5. Form 7554-10 - Bid Bond and Acknowledgement *(required with bid)*
6. Affirmative Action and Minority & Women Owned Business Enterprises *from SUNY Procedure Item #7557 "Participation by Minority Group Members and Women (MWBEs) with Respect to State University of New York Contract" (applies >$100,000)*
   a. Form 7557-121b – MWBE Prospective Bidders Notice
   b. Form 7557-107 - M/WBE Utilization Plan *(required within seven days of the bid)*
   c. The Contractor's EEO Policy Statement or Form 7557-104 *(required within seven days of the bid)*
   d. 7557-108 - M/WBE-EEO Work Plan or EEO Staffing Plan *(required within seven days of the bid)*

   Note: In accordance Procedure Item #7557 MWBE Utilization Plans, EEO policy statements and EEO Work Plans are due within seven days of submittal of the bid.

7. Service Disabled Owned Business Enterprise *from SUNY Procedure Item #7564 "Participation by Service-Disabled Veteran-Owned Business (SDVOBs) with Respect to State University of New York Contracts" (applies >$100,000)*
   a. Form 7564-121b – SDVOB Prospective Bidders Notice
   b. Form 7564-107 - SDVOB Utilization Plan *(required within seven days of the bid)*

Attachments –Additional Contractor Documentation (required after bid opening from the low bidder)

8. State Finance Law §§139-j and 139-k *from SUNY Procedure Item #7552 "Procurement Lobbying Procedure for State University of New York" (applies >$15,000)*
   a. Form A - Summary: Policy and Procedure of the State University of New York Relating to State Finance Law §§139-j and 139-k
   b. Form B - Affirmation with respect to State Finance Law §§139-j and 139-k
   c. Form C - Disclosure and Certification with respect to State Finance Law §§139-j and 139-k

9. Bidder's Certifications (State Finance Law §139-l, Non-collusive bidding, Executive Order 177) *from SUNY Procedure Item #7554 "Construction Contracting Procedures*
   a. Form 7554-20 Bidder's Certifications

10. Procurement Forms *from SUNY Procedure Item #7553 "Purchasing and Contracting (Procurement)*
    a. Form I Omnibus Procurement Act of 1992 *(applies >$1,000,000)*
    b. Form II Omnibus Procurement Act of 1992, Out of state firms *(applies >$1,000,000)*
    c. Form XIII Public Officers Law Compliance

11. Bonds and Certificate of Insurance *from SUNY Procedure Item #7554 "Construction Contracting Procedures*
    a. Form 7554-11 Labor & Materials and Performance Bonds *(applies >$50,000)*

b. Form 7554-12 Certificate of Insurance *(applies to all contracts)*
c. NYS Workers Compensation and Disability Insurance *(applies all contracts)*

12. Vendor Responsibility
    a. OSC's Vendrep - Online System or Link to paper forms *(form applies ≥ $100,000)*

13. NYS Labor Law, Section 220-a
    a. Form 7554-13
        i. Form AC 2947, Prime Contractor's Certification
        ii. Form AC 2948, Subcontractor's Certification
        iii. Form AC 2958, Sub-subcontractor's Certification

Notice to Bidders

The State University of New York **Purchase College** will receive sealed bids for project number **SU-071321 titled Studio A Renovation** at **2:00 p.m.** local time on **November 3, 2021** at the Procurement and Accounts Payable Office, Campus Center South 3rd floor, Purchase College, 735 Anderson Hill Road, Purchase New York 10577-1402, where such proposals will be publicly opened and read aloud. Proposals may be hand delivered or mailed to the above location and must be received by such time.

All work on this Contract is to be completed within **(180)** calendar days after the date of the Notice to Proceed.

A Pre-Bid Conference and site walk-through for prospective Bidders will be held at **11:00 a.m.** on **October 20th, 2021** at the Capital Facilities Planning Building conference room at Purchase College, 735 Anderson Hill Road, Purchase New York 10577-1402. Please note: This will be the only guided walk-through of the subject project facilities.

*Please note: potential bidders must RSVP to Sayim Malik, Project Manager, Capital Facilities Planning (email Sayim.malik@purchase.edu) no later than **Monday, October 18th, by 2:00 p.m.** in order to receive the required COVID-19 release to come to campus

For directions to Purchase College, see
https://www.purchase.edu/admissions/travel-and-transportation/#Directions

For a campus map, see
https://www.purchase.edu/live/files/220-campus-map

Purchase College is dedicated to environmentally sustainable practices and development. In an effort to conserve resources and reduce waste, the Bidding and Contract Documents will only be available electronically in PDF format for viewing and downloading at the following website:
https://www.purchase.edu/PurchaseMeansBusiness

There will be a Question Period from **October 15th – October 23rd, 2021**. During this time any questions must be submitted in writing (no telephone calls) to the following email address sayim.malik@purchase.edu . The email should reference the project in the subject line and include prospective bidder contact information and email address. A response to all questions submitted within the Question Period and any required Addenda will be posted no later than the close of business on **October 29th, 2021**.

Bids must be submitted in duplicate in accordance with the instructions contained in the Information for Bidders. Security will be required for each bid in an amount not less than five (5) percent of the Total Bid.

It is the policy of the State of New York and the State University of New York to encourage minority business enterprise participation in this project by contractors, subcontractors and suppliers, and all bidders are expected to cooperate in implementing this policy. The minority (MBE) and women (WBE) owned business contractor/subcontractor participation goals for this construction procurement are **25%**

for MBEs and **5%** for WBEs. The service disabled veteran owned business (SDVOB) subcontractor participation goal is **6%**.

The rates of wages and supplements determined by the Industrial Commissioner of the State of New York as prevailing in the locality of the site at which the work will be performed can be found at: https://apps.labor.ny.gov/wpp/publicViewProject.do?method=showIt&id=1520559

The Prevailing Rate Case (PRC) Number assigned to this project is 2021010041.

Pursuant to State Finance Law §§139-j and 139-k, this solicitation includes and imposes certain restrictions on communications between Purchase College and an Offer or/Bidder during the procurement process. An Offer or/Bidder is restricted from making contacts from the earliest notice of intent to solicit proposals through final award and approval of the Procurement Contract by Purchase College/State University of New York and, if applicable, the Office of the State Comptroller ("restricted period") to other than designated staff unless it is a contact that is included among certain statutory exceptions set forth in State Finance Law §139-j(3)(a). Pursuant to the statute, Purchase College employees are also required to obtain certain information when contacted during the restricted period and maintain a record of the communication and make a determination of a knowing and willful contact. Contact made to other than designated staff regarding this procurement may disqualify the vendor from the current award and affect future procurements with government entities in the State of New York.

The State University of New York reserves the right to reject any or all bids.

Designated Contacts:

Sayim Malik
Project Manager, Capital Facilities Planning
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State University of New York
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Purchase, NY 10577-1402
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INFORMATION FOR BIDDERS

Section 1 Definitions

All definitions set forth in the Agreement are applicable to the Notice to Bidders, Information for Bidders, and the Proposal, all of which documents are hereinafter referred to as the Bidding Documents.

Section 2 Issuance of Bidding and Contract Documents

Drawings and Specifications will be issued by the Consultant upon request after payment of the deposit specified in the Notice to Bidders.

Section 3 Proposals

(1) Proposals must be submitted in duplicate on the forms provided by the University. They shall be addressed to the University in a sealed envelope, marked with the name and address of the bidder, the title of the Project and the Project number. The University accepts no responsibility for Proposals that may be delivered by any courier or other messenger service that does not contain all of the above-noted information on the outside of a sealed envelope. Facsimile or email copies of the Proposal will not be accepted.

Sealed Proposals are to be delivered to:

Sheli Taylor
Associate Director of Procurement & Accounts Payable
SUNY Purchase College
735 Anderson Hill Road
Purchase, NY 10577-1402
Tel: (914) 251-6089
Fax: (914) 251-6075
Email: sheli.taylor@purchase.edu

(2) All blank spaces in the Proposal must be filled in and, except as otherwise expressly provided in the Bidding Documents; no change is to be made in the phraseology of the Proposal or in the items mentioned therein.

(3) Proposals that are illegible or that contains omissions, alterations, additions, or items not called for in the Bidding Documents may be rejected as informal. In the event any bidder modifies, limits or restricts all or any part of its Proposal in a manner other than that expressly provided for in the Bidding Documents, its Proposal may be rejected as informal.

(4) Any Proposal may be considered informal which does not contain prices in words and figures in all of the spaces provided or which is not accompanied by a bid security in proper form. In case any price shown in words and its equivalent shown in figures do not agree, the written words shall be binding upon the bidder. In case of a discrepancy in the prices contained in the Proposal forms submitted in duplicate by the bidder, the Proposal form which contains the lower bid shall be deemed the bid of the bidder; provided, however, the University at its election may consider the Proposal of such bidder informal.

(5) If the Proposal is made by a corporation, the names and places of residence of the president, secretary and treasurer shall be given. If by a partnership, the names and places of residence of

the partners shall be given. If by a joint venture, the names and addresses of the members of the joint venture shall be given. If by an individual, the name and place of residence shall be given.

(6) No Proposal will be considered which has not been deposited with the University at the location designated in and prior to the time of opening of bids designated in the Bidding and Contract Documents or prior to the time of opening as extended by Addendum.

(7) Bids may be modified, withdrawn or canceled only in writing or by email notice received by the University prior to the time of opening of bids designated in the Bidding and Contract Documents. A written or email notice of modification, withdrawal or cancellation shall be marked by the bidder with the name and address of the bidder, the title of the Project and the Project number. Upon receipt by the University a duly authorized employee of the University, who shall note thereon the date and time of receipt and shall thereupon attach said written or email notice of modification, withdrawal or cancellation to the envelope submitted by the bidder pursuant to subdivision (1) of this

(8) Permission will not be given to modify, explain, withdraw or cancel any Proposal or part thereof after the time designated in the Bidding and Contract Documents for the opening of bids, unless such modification, explanation, withdrawal or cancellation is permitted by law and the University is of the opinion that it is in the public interest to permit the same.

Section 4 Examination of Bidding and Contract Documents

(1) Prospective bidders shall examine the Bidding and Contract Documents carefully and, before bidding, shall make written request to the Consultant (with a copy thereof to the University) for an interpretation or correction of any ambiguity, inconsistency or error therein which should be discovered by a reasonably prudent bidder. Such interpretation or correction as well as any additional Contract provision the University shall decide to include will be issued in writing by the Consultant as an Addendum, which will be sent to each person recorded as having received a copy of the Bidding and Contract Documents from the Consultant, and which also will be available at the places where the Bidding and Contract Documents are available for inspection by prospective bidders. Upon such emailing or delivery and making available for inspection, such Addendum will become a part of the Bidding and Contract Documents and will be binding on all bidders whether or not the bidder receives or acknowledges the actual notice of it. Prospective bidders are responsible for ensuring that all addenda have been incorporated into the bid. The requirements contained in all Bidding and Contract Documents shall apply to all Addenda.

(2) Only the written interpretation or correction so given by Addendum shall be binding. Prospective bidders are warned that no trustee, officer, agent or employee of the University or the Consultant is authorized to explain or interpret the Bidding and Contract Documents by any other method, and any such explanation or interpretation, if given, must not be relied upon.

Section 5 Computation of Bid

(1) In computing their bids, bidders are not to include the sales and compensating use taxes of the State of New York or of any city and county in the State of New York for any supplies or materials which are incorporated into the completed Project as the University is exempt from such taxes.

(2) Unit prices may be inserted in the Proposal by the University or the bidder at the discretion of the University. Any unit prices listed in the Proposal by the University are based upon the Consultant's

appraisal of a fair cost for the work involved. Such listed prices will be binding upon both the bidder and the University unless the bidder wishes to change any of such unit prices by crossing out the listed unit price and inserting a revised unit price. Such revised unit price shall not be binding upon the University unless it accepts the same, in writing, before it issues a Notice of Award. In the event the Proposal contains blank spaces for unit prices or the bidder revises any stated unit price, the amount of such unit prices for additions shall not vary by more than 15 percent from the prices inserted by the bidder for deductions, and, if the variance of such prices exceeds 15 percent, the University may adjust the deduction price inserted by the bidder so that it is only 15 percent lower than the addition price inserted by the bidder. In addition, the University may adjust any unit price filled in by a bidder to an amount agreeable to both the bidder and the University or it may reject any unit prices.

(3) Alternates, if any, listed in the Proposal shall be accepted in the order indicated and will be used in combination with the Base Bid to determine the low bidder. Unit prices will not be used to determine the low bidder.

(4) If a tie bid should occur the University reserves the right to use one of the following methods to determine the successful bidder. For tie bids between two contractors the University representative shall flip a coin, both affected contractors must be present for the coin toss. For tie bids between three or more contractors the University representative shall pull names from a bowl, hat or other container. The affected contractors must be present for the drawing.

Section 6 Payment of Bid Security

(1) Each Proposal must be accompanied by the required amount of the bid security, which is 5% of the Total Bid, in the form of a bank draft or certified check, payable at sight to the University and drawn on a bank authorized to do business in the United States, or by a Bid Bond, on a form approved by the University, duly executed by the bidder as principal and having as surety thereon a surety company or companies, approved by the University, authorized to do business in the State of New York as a surety. Attorneys-in-fact who execute a Bid Bond on behalf of a surety must affix thereto a certified and effectively dated copy of their power of attorney.

(2) The University will return, without interest, bid securities in accordance with the following procedure:

a. To all bidders except the apparent three (3) lowest bidders within two (2) working days after the opening of bids.

b. To any bidder submitting a Bid Bond as a replacement for a previously provided bank draft or certified check, within two (2) working days after the University's approval of such Bid Bond.

c. To the apparent three (3) lowest bidders, unless their bid security was previously returned, within two (2) working days after delivery to the University by the successful bidder of the executed Agreement and required Bonds, or within two (2) working days of the University's rejection of all bids or within two (2) working days after the expiration of forty-five (45) calendar days after the bid opening, whichever event shall occur first.

d. Bid Bonds, due to their nature, will not be returned.

(3) The University reserves the right to deposit bid security drafts or checks pending final disposal of them.

Section 7 Qualifications of Bidders

(1) A bidder must demonstrate, to the satisfaction of the University, that it has successfully completed three (3) contracts similar in size, scope, and complexity to this contract within the last five (5) years.

a. For scope and complexity, similar work is defined as Music Studio work, as further described in the General Requirements, Description of Work.

b. The determination of relevant contract experience in terms of size, scope and complexity will be at the sole discretion of the University.

c. The above three projects shall be submitted on Attachment A of the Proposal (Form 7554-07), "List of Completed Similar Construction Projects" (the List). If the List is not provided or is missing information, and/or is found to have erroneous information or information that is no longer current, a Proposal may be rejected as not responsive. If requested by the University, the bidder may be permitted to add missing information, modify and/or explain erroneous information or information that is no longer current on the List. Modifications and/or explanations of the List must be received within 48 hours of receipt of the University's request.

(2) All prospective bidders must demonstrate to the satisfaction of the University that they have the skill and experience, as well as the necessary facilities, ample financial resources, ability to manage staff and subcontractors effectively, ability to anticipate and plan construction work for optimal progress, ability to create, strive for and maintain working environments and relationships that are constructive, communicative and cooperative, organization and general reliability to do the work to be performed under the provisions of the Contract in a satisfactory manner and within the time specified.

(3) Each bidder must demonstrate to the satisfaction of the University that it has working capital available for the Project upon which it is bidding in an amount equal to 15 percent of the first $100,000 of the amount of its Base Bid plus 10 percent of the next $900,000 plus 5 percent of the remainder of its Base Bid. Working capital is defined as the excess of current assets over current liabilities. The University defines current assets as assets which can be reasonably expected to be converted into cash within a year, and current liabilities as debts which will have to be paid within a year.

(4). The University may make such investigation as the University deems necessary to determine the ability of any bidder to perform the Work. Bidders shall furnish to the University all information and data required by the University, including complete financial data, within the time and in the form and manner required by the University. The University reserves the right to reject any bid if the evidence submitted by or an investigation of such bidder fails to satisfy the University that such bidder is properly qualified to carry out its obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

(5) At the time of the bid opening, all bidders and subcontractors, domestic and foreign, must be in compliance with New York State business registration requirements. Contact the NYS Department of State regarding compliance.

Section 8 Submission of Post-Bid Information

(1) Within forty-eight (48) hours after the opening of bids, each of the apparent three lowest bidders, unless otherwise directed by the University or otherwise provided in the Bidding and Contract Documents, shall submit to both the University and the Consultant:

a. Evidence of a completed New York State Uniform Contracting Questionnaire (Vendor Responsibility Questionnaire For-Profit Construction (CCA-2)). Either email confirmation that the bidder's CCA-2 is current and certified in the New York State VendRep System (VendRep) within the last six months from the bid date, or deliver a certified paper format CCA-2, including all attachments, to the University.

The University recommends that vendors file the required CCA-2 online via the VendRep. To enroll in and use the VendRep, see the VendRep Instructions at https://www.osc.state.ny.us/vendrep/info_vrsystem.htm or go directly to the VendRep online at https://portal.osc.state.ny.us. To request assistance, contact the Office of the State Comptroller's ("OSC") Help Desk at 866-370-4672 or 518- 408-4672 or by email at ciohelpdesk@osc.state.ny.us.

The paper format CCA-2 and accompanying definitions are available on the OSC website at the following location:

http://www.osc.state.ny.us/vendrep/forms_vendor.htm

b. A working plan and schedule showing clearly, in sequence and time-scale, all significant activities of the work. The working plan and schedule shall be in the form of suitable charts, diagrams or bar graphs and shall be based on the Contractor's logic and time estimates for the anticipated time of commencement and completion of the work and its significant phases and activities and the interrelationship between such significant activities and other items pertinent to the work. This requirement is in addition to and not a substitute for the schedule requirements of section 3.02 (Time Progress Schedule) of the Agreement. Although the working plan and schedule submitted shall not be used in determining the lowest responsible bidder, failure to submit the working plan and schedule may result in the rejection of the Proposal as not responsive.

c. The names and addresses of the bidder's proposed subcontractor for the Asbestos Abatement work of any value, and proposed subcontractors for Electrical Work, the Heating, Ventilating and Air-Conditioning Work and the Plumbing Work for each of said work categories valued at $100,000 or more.

i. For each proposed subcontractor named, provide a completed "List of Completed Similar Construction Projects (the List)." If the List is not provided or is missing information, and/or is found to have erroneous information or information that is no longer current, a proposed subcontractor may be rejected. If requested by the University, the bidder may be permitted to add missing information, modify and/or explain erroneous information or information that is no longer current on the List; modifications and/or explanations of the List must be received promptly after receipt of the University's request.

ii. Only one proposed subcontractor should be named for each of such trades. Proposed subcontractors of the bidder may not be changed except with the specific written

approval of the University.

iii. The naming of the bidder itself for any of such work is not acceptable and may result in rejection of the bidder unless the bidder can demonstrate to the University that it has successfully completed or substantially completed three (3) contracts similar in size, scope and complexity for the designated work within the last five (5) years. The determination of relevant contract experience in terms of size, scope and complexity will be at the sole discretion of the University.

iv. The bidder will be required to establish, to the satisfaction of the Consultant and the University, the reliability and responsibility of each of their said proposed subcontractors to furnish and perform the work described in the sections of the Specifications pertaining to each of such proposed subcontractors' respective trades. By submission of the "List of Completed Similar Construction Projects," a proposed subcontractor must be able to demonstrate that they have successfully completed or substantially completed three (3) contracts similar in size, scope and complexity for the designated work within the last five (5) years. The determination of relevant contract experience in terms of size, scope and complexity will be at the sole discretion of the University.

v. For each of the proposed subcontractors, the bidders must submit to the University, within seven (7) calendar days after the bid opening, evidence of a completed New York State Uniform Contracting Questionnaire (Vendor Responsibility Questionnaire For-Profit Construction (CCA-2)). Either email confirmation that the subcontractor's CCA-2 is current and certified in the New York State VendRep System (VendRep) within the last six months from the bid date, or deliver a certified paper format CCA-2, including all attachments, to the University.

vi. In the event that the University and the Consultant reject any of said proposed subcontractors, the bidder, within two (2) working days after receipt of notification of such rejection, shall again submit to the University and the Consultant the name of another proposed subcontractor in place of the one rejected and it will be required to establish to the satisfaction of the University and the Consultant the reliability and responsibility of said proposed subcontractor; When naming another proposed subcontractor, the bidder must promptly submit the proposed subcontractor's completed "List of Completed Similar Construction Projects" and their completed CCA-2.

vii. The bidder will not be permitted to submit another proposed subcontractor if it designated itself for any of the aforesaid categories of work.

viii. Proposed subcontractors of the bidder, approved by the University and the Consultant, must be used on the work for which they were proposed and approved and they may not be changed except with the specific written approval of the University.

d. A breakdown of the amount of the bidder's Proposal. Such breakdown shall be prepared in accordance with industry standards. No bidder shall be barred from revising, in the Contract breakdown required under the provisions of Section 4.08 of the Agreement, the various amounts listed in the bid breakdown required under the provisions of this Section. The amount set forth in said bid breakdown will not be considered as fixing the basis for additions to or deductions from the Contract consideration.

(2) Except for Contracts of $100,000 or less, within seven (7) calendar days after the opening of bids, unless otherwise directed by the University, the three low bidders shall submit to the University for its approval, a Minority and Women-owned Business Enterprise Utilization Plan (Form 7557-107).

(3) Except for contracts of $100,000 or less, within seven (7) calendar days after the opening of bids, the three low bidders shall submit to the University for its approval, an Equal Employment Opportunity Statement and EEO Plan (Form 7557-105) to ensure equal employment opportunities without discrimination because of race, creed, color, sex or national origin. Such Statement and plan should demonstrate the bidder's intent to comply with the provisions of Article VI of the Agreement. The EEO plan should include the methods that the bidder will use to address nondiscrimination and affirmative action so that minorities and women will be included in the work force. The Equal Employment Opportunity ("EEO") Policy Statement that shall contain, but not necessarily be limited to, a provision that the bidder, as a precondition to entering into a valid and binding Contract with the University, shall during the performance of the Contract, agree to the following:

a. It will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability or marital status, will undertake or continue existing programs of affirmative action to ensure that minority group membership and women are afforded equal employment opportunities without discrimination, and shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on the Contract.

b. It shall state in all solicitations or advertisements for employees that, in the performance of the Contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

c. At the request of the University, it shall request each employment agency, labor union or authorized representative of workers, with which it has collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the bidder's obligations herein.

d. After the award of the contract, it shall submit to the University a work force utilization report, in a form and manner required by the University, of the work force actually utilized on the Contract, broken down by specified ethnic background, gender and Federal occupational categories or other appropriate categories specified by the University.

(4) The above information and such other information as the University or the Consultant may request or obtain will be used by the University in determining the reliability and responsibility of the bidder and any proposed subcontractors. Each bidder must comply promptly with all requests by the University and the Consultant for information and must actively cooperate with the University and the Consultant in their efforts to determine the qualifications of the bidder and any proposed subcontractors. Failure to comply with the latter may result in the rejection of the Proposal as not responsive. All information required to be furnished to the University under this Section shall be sent to the State University at {insert address or email address}.

Section 9 Award of Contract

(1) The award of the Contract shall be made to the bidder submitting the lowest bid that is responsive to the solicitation and who, in the sole opinion of the University, is qualified to perform the work. The University shall determine the lowest bid by adding to or deducting from the Base Bid of the bidders the additive or deductive alternates, if any, the University elects to accept after the opening of the Proposals. Alternates will be accepted in the order they are set forth in the Proposal. The unit prices set forth in the Proposal for additions to or deductions from the work shall not be considered in determining the lowest bid.

The lowest base bid shall not exceed the amount of funds then estimated by the University as available to finance the contract. If the lowest bidder exceeds such amount, the University may reject all bids, or may award the contract on the base bid combined with deductive alternates applied in the order they are set forth in the Proposal as produces the net amount which is within the available funds.

(2) The right is reserved, if, in the University's judgment, the public interest will be promoted thereby, to reject any or all Proposals, to waive any informality in any Proposal received or to afford any bidder an opportunity to remedy any deficiency resulting from a minor informality or irregularity. Without limiting the generality of the foregoing:

a. A Proposal may be rejected as not responsive if the bidder fails to furnish the required bid security or to submit the data required with or after its Proposal and this Information for Bidders.

b. A Proposal may be rejected as not responsive if the bidder cannot show to the satisfaction of the University: (i) that it has the necessary qualifications and capital; or (ii) that it owns, controls or can procure the necessary plant and equipment to commence the work at the time prescribed in the Contract and thereafter to prosecute and complete the work at the rate, or within the time specified; or (iii) that it is not already obligated by the performance of so much other work as is likely to delay the commencement, prosecution or completion of the work contemplated by the Contract.

c. A Proposal will be rejected as not responsive if it does not provide for the completion of the work by the date of completion specified in the Proposal.

(3) The University also expressly reserves the right to reject any Proposal as not responsive if, in its opinion, considering the work to be performed, the facts, as to the bidder's business or technical organization, plant, financial and other sources of business experience compared with the work bid upon, justify rejection.

(4) The award of the Contract shall not be construed as a guarantee by the University that the plant, equipment and the general scheme of operations and other data submitted by the bidder with or after its Proposal is either adequate or suitable for the satisfactory performance of the work.

Section 10 Required Bonds and Insurance

(1) Unless otherwise agreed to by the University, within ten (10) working days after the receipt of Letter of Intent, the Contractor shall procure, execute and deliver to the University and maintain, at its own cost and expense:

a. A Performance Bond and a Labor and Material Bond, both of which bonds shall be on the form prescribed by the University and in an amount not less than 100 percent of the total amount of the Contract awarded to the Contractor by the University said bonds must be issued by a surety company approved by the University and authorized to do business in the State of New York as a surety.

b. Attorneys-in-fact who execute said Bonds on behalf of a surety must affix thereto a certified and effectively dated copy of their power of appointment.

(2) Prior to the commencement of work the Successful Bidder will provide, at its sole cost and expense, Certificates of Insurance in accordance with Section 5.06 and 5.07 of the Construction Agreement, which shall remain in force throughout the term of the agreement, or any extension thereof. Such Certificates of Insurances shall be from an insurance company licensed by the New York State Department of Insurance with a rating of at least "A-" as published with Standard & Poor's, and a liability insurance policy with limits no less than **$2,000,000.00** per claim. If during the term of the policy, the carrier's rating falls below "A-", the liability insurance must be replaced no later than the renewal date of the policy with an insurer acceptable to the State of New York. Such policies shall name the STATE UNIVERSITY OF NEW YORK as an additional insured. The policy shall designate the State University of New York as the loss payee and shall contain a provision that the State University of New York shall receive at least thirty (30) days' notice prior to material change, cancellation or expiration of any such policy.

(3) Workers Compensation Insurance & Disability Benefits Coverage
All employees of the Successful Bidder shall be adequately and properly covered by Workers' Compensation Insurance and Disability Benefits coverage for all work related to the resultant contract. Such policies shall name the STATE UNIVERSITY OF NEW YORK as an additional insured and are to be written by recognized and well-rated insurance companies authorized to transact business in the State of New York. The Successful Bidder shall deliver certificates of such coverage, or proof that such coverage is not required, in the required format, as required by the Workers' Compensation Board, to the following when the agreement is signed by the parties and thereafter not less than thirty (30) days prior to material change or cancellation of such coverage.

(4) Proof of insurances with the specific coverage and limits required in Article V of the Agreement. Acceptable documents are:

a. Proof of NYS Worker's Compensation is only accepted on the C-105.2 or U-26.3 form.
b. Proof of Disability insurance is only accepted on the DB-120.1 form. Use the link below for a description of the required forms for Workers Compensation and Disability:
http://www.osc.state.ny.us/agencies/guide/MyWebHelp/Content/XI/18/G.htm
c. All other proof of insurance must be on the Acord 25 Certificate of Liability Insurance form.

(5) A 120-day schedule

a. After receipt of the Letter of Intent but before receipt of the Contract is Awarded, the Contractor, unless otherwise directed by the University, shall update the working plan and schedule previously submitted in accordance with the Information for Bidders to define the contractor's planned operations during the first 120 days and submit it to the University and the Consultant for their acceptance. The updated working plan and schedule shall be in the form of suitable charts, diagrams or bar graphs and shall be based on the Contractor's logic and time estimates. When updated, such plan and

schedule shall be sufficiently detailed to show clearly, in sequence, all salient features of the work of each trade including: the anticipated time of commencement and completion of such work and the interrelationship between such work, submission of Shop Drawings and Samples for approval, approval of Shop Drawings and Samples, placing of orders of materials, fabrication and delivery of materials, installation and testing of materials, contiguous or related work under other contracts, and other items pertinent to the work. The Notice to Proceed may be withheld until this schedule is received and is deemed responsive to the project requirements.

b. After Contract Award, but before processing second progress payment application, the Contractor, unless otherwise directed by the University, shall submit to the University and the Consultant for their acceptance its proposed working plan and project time schedule for all the work covered by the Contract, and shall include activities for preparation and submission of all Shop Drawings and Samples. Said proposed working plan and schedule shall be prepared in accordance with the form and requirements set forth in the preceding paragraph.

Section 11 Minority and Women-Owned Business Enterprises

(1) Pursuant to New York State Executive Law Article 15-A, the University recognizes its obligation under the law to promote opportunities for maximum feasible participation of certified Minority and Women-Owned Business Enterprises and the employment of minority group members and women in the performance of University contracts.

(2) For purposes of this solicitation, the University hereby establishes an overall goal of **30%** for MWBE participation, **25%** for Minority-Owned Business Enterprises ("MBE") participation and **5%** for Women-Owned Business Enterprises ("WBE") participation (based on the current availability of qualified MBEs and WBEs). For additional information please refer to the MWBE requirements outlined in the Prospective Bidders Notice (Form 7557-121b) and Exhibit A-1.

(3) For guidance on how the University will determine a Contractor's "good faith efforts," refer to 5 NYCRR §142.8.

(4) Please note the forms identified in the Prospective Bidders Notice (Form 7557-121b) must be submitted within seven days of the bid opening. Required forms include the MWBE-EEO Policy Statement (Form 7557-104 or equivalent), the MWBE Utilization Plan (Form 7557-107) and the EEO Staffing Plan (Form 7557-108).

(5) Upon contract award and prior to contract execution the selected awardee will enter its Statewide Utilization Management Plan (SUMP) and document its good faith efforts to achieve the applicable MWBE participation goals by submitting evidence through the New York State Contract System, which can be viewed at: http://ny.newnycontracts.com, provided however, that the selected awardee may arrange to provide such evidence via a non-electronic method by contacting the SUNY Office of Diversity, Equity, and Inclusion.

(6) Any modifications or changes to the MWBE Utilization Plan after the Contract award and during the term of the Contract must be reported on a revised MWBE Utilization Plan and submitted to the University. The University will review the submitted MWBE Utilization Plan and advise the Bidder of the University's acceptance or issue a notice of deficiency within 30 days of receipt.

(7) If a notice of deficiency is issued, Awardee agrees that it shall respond to the notice of deficiency

within seven (7) business days of receipt by submitting to SUNY [address phone and fax information], a written remedy in response to the notice of deficiency. If the written remedy that is submitted is not timely or is found by SUNY to be inadequate, SUNY shall notify the Awardee and direct the Awardee to submit, within five (5) business days, a request for a partial or total waiver of MWBE participation goals on Form 7557-114. Failure to file the waiver form in a timely manner may be grounds for disqualification of the bid or proposal.

SUNY may disqualify a Bidder as being non-responsive under the following circumstances:

i. If a Bidder fails to submit a MWBE Utilization Plan;
ii. If a Bidder fails to submit a written remedy to a notice of deficiency;
iii. If a Bidder fails to submit a request for waiver; or
iv. If SUNY determines that the Bidder has failed to document good faith efforts.

Section 12 Equal Employment Opportunity Requirements

(1) Pursuant to Article 15 of the Executive Law (the "Human Rights Law"), and all other State and Federal statutory and constitutional non-discrimination provisions, the Bidder will not discriminate against any employee or applicant for employment because of race, creed, color, sex, religion, national origin, military status, sexual orientation, gender identity or expression, age, disability, predisposing genetic characteristics, domestic violence victim status, familial status or marital status. The Bidder shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest. The Bidder will state in all solicitations or advertisements for employees that, in the performance of this Contract, all qualified applicants will be afforded equal employment opportunities without discrimination.

(2) The Bidder will undertake, or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination, and, if awarded a Contract pursuant to this solicitation, will make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force during its legal engagement with SUNY.

(3) By submission of a bid or proposal in response to this solicitation, the Bidder agrees with all of the terms and conditions of SUNY Exhibit A including Clause 12 - Equal Employment Opportunities for Minorities and Women and acknowledges that, if the Bidder is awarded a Contract, The Contractor is required to ensure that it and any subcontractors awarded a subcontract over $25,000 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor, shall undertake or continue programs to ensure that minority group members and women are afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status. For these purposes, equal opportunity shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, termination, and rates of pay or other forms of compensation. This requirement does not apply to: (i) work, goods, or services unrelated to the Contract; or (ii) employment outside New York State.

(4) The Bidder further agrees, where applicable, to submit with the bid a staffing plan (Form 7557-108) identifying the anticipated work force to be utilized on the Contract and, if awarded a Contract, will, upon request, submit to SUNY a workforce utilization report identifying the workforce actually utilized on the Contract if known. Forms are available in SUNY Procurement Policies and Procedures Document 7557 online at: http://www.suny.edu/sunypp/documents.cfm?doc_id=611.

Please Note: Failure to comply with the foregoing requirements may result in a finding of non-responsiveness, non-responsibility and/or a breach of the Contract, leading to the withholding of funds, suspension or termination of the Contract or such other actions or enforcement proceedings as allowed by the Contract.

Section 13 Executive Order 162 (EO162)

(1) Governor Cuomo's Executive Order 162 requires state contractors to disclose data on the gender, race, ethnicity, job title, and salary of employees performing work on state contracts.

(2) Bidder agrees to submit Workforce Utilization Report (Form 7557-110) and to require the same information to be submitted by any of their subcontractors on the state contract, in such format as shall be required by SUNY on a monthly basis for all construction contracts and quarterly basis for all other contracts during the term of the contract. Empire State Development has provided specific details on this requirement at https://esd.ny.gov/doing-business-ny/mwbe/mwbe-executive-order-162.

Section 14 Executive Order 177 (EO177)

(1) The New York State Human Rights Law, Article 15 of the Executive Law, prohibits discrimination and harassment based on age, race, creed, color, national origin, sex, sexual orientation, gender identity, disability, marital status, military status, or other protected status.

(2) The Human Rights Law may also require reasonable accommodation for persons with disabilities and pregnancy-related conditions. A reasonable accommodation is an adjustment to a job or work environment that enables a person with a disability to perform the essential functions of a job in a reasonable manner. The Human Rights Law may also require reasonable accommodation in employment on the basis of Sabbath observance or religious practices.

(3) Generally, the Human Rights Law applies to: (i) all employers of four or more people, employment agencies, labor organizations and apprenticeship training programs in all instances of discrimination or harassment; (ii) employers with fewer than four employees in all cases involving sexual harassment; and (iii) any employer of domestic workers in cases involving sexual harassment or harassment based on gender, race, religion or national origin.

(4) In accordance with Executive Order No. 177, prior to contract award, selected Awardee must submit a certification that it does not have institutional policies or practices that fail to address harassment and discrimination as described above. SUNY is electing to obtain the certification with the bid documents to avoid unnecessary delay in the contract award process. All Bidders must sign and submit the certification attached to this IFB, SUNY Form 7554-20.

Section 15 Service Disabled Veteran Owned Business Enterprises

(1) Consistent with the State University of New York's commitment to, and in accordance with, Article 17-B of the New York State Executive Law, contractors are required to ensure that good faith efforts are made to include meaningful participation by Service Disabled Veteran-Owned Business in SUNY's MWBE Program. The requirements apply to contracts in excess of $100,000.

(2) To ensure that SDVOB Enterprises are afforded the opportunity for meaningful participation in the performance of the University's contracts, and to assist in achieving the SDVOB Act's statewide

goal for participation on state contracts the University hereby establishes an overall goal of 6% for SDVOB participation for this solicitation.

(3) For additional information please refer to the SDVOB requirements outlined in the Prospective Bidders Notice (Form 7564-121b). Please note the SDVOB Utilization Plan (Form 7564-107) must be submitted within seven days of the bid opening.

Section 16 Encouraging Use of New York State Business Businesses in Contract Performance

(1) New York State businesses have a substantial presence in State contracts and strongly contribute to the economies of the state and the nation. In recognition of their economic activity and leadership in doing business in New York State, bidders/proposers for this contract for commodities, services or technology are strongly encouraged and expected to consider New York State businesses in the fulfillment of the requirements of the contract. Such partnering may be as subcontractors, suppliers, protégés or other supporting roles.

(2) Bidders/proposers need to be aware that all authorized users of this contract will be strongly encouraged, to the maximum extent practical and consistent with legal requirements, to use responsible and responsive New York State businesses in purchasing commodities that are of equal quality and functionality and in utilizing services and technology. Furthermore, bidders/proposers are reminded that they must continue to utilize small, minority and women-owned businesses, consistent with current State law.

(3) Utilizing New York State businesses in State contracts will help create more private sector jobs, rebuild New York's infrastructure, and maximize economic activity to the mutual benefit of the contractor and its New York State business partners. New York State businesses will promote the contractor's optimal performance under the contract, thereby fully benefiting the public sector programs that are supported by associated procurements.

(4) Public procurements can drive and improve the State's economic engine through promotion of the use of New York businesses by its contractors. The State therefore expects bidders/proposers to provide maximum assistance to New York businesses in their use of the contract. The potential participation by all kinds of New York businesses will deliver great value to the State and its taxpayers.

(5) Information on the availability of New York State subcontractors and suppliers is available from: New York State Department of Economic Development, Procurement Assistance Unit, One Commerce Plaza, Albany, New York 12245, Phone: (518) 474-7756, Fax: (518) 486-7577.

Section 17 Single Contract Responsibility

This is a single bid general construction project. The Contractor submitting the bid is responsible for all work associated with this Project.

Section 18 Examination of Site and Conditions of Work

(1) A non-mandatory pre-bid conference and project walk-through will be held with all contractors assembled at **11:00 a.m.** on **October 20th, 2021** at the Capital Facilities Planning Building conference room at Purchase College, 735 Anderson Hill Road, Purchase New York 10577-1402. No individual or additional walk-throughs will be provided. Failure to attend a walk-through shall not

be the cause for extra payment.

(2) Each bidder must inform itself fully of the conditions relating to the construction of the project and the employment of labor on the project. Failure to do so will not relieve a successful bidder of their obligation to furnish all material and labor necessary to carry out the provisions of their contract. To the extent possible, the contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

Section 19 General Terms and Conditions

(1) The following items will be incorporated into, and made part of, the formal agreement: (1)the University's Invitation for Bid; (2) the Successful Bidder's proposal; (3) Exhibit A, Standard Contract Clauses; (4) Exhibit A-1, Affirmative Action Clauses; and, (5) Forms A and B Procurement Lobbying Forms.

(2) In the event of any inconsistency in or conflict among the document elements of the agreement described above, such inconsistency or conflict shall be resolved by giving precedence to the document elements in the following order: (1) Exhibits A and A-1; (2) Forms A and B Procurement Lobbying Forms, (3) the Agreement; (4) this IFB; and (5) the Successful Bidder's proposal.

Section 19.1 Vendor Debriefing and Contract Award Protest Procedure

(1) Upon being notified of their unsuccessful bids, unsuccessful bidders may request in writing a debriefing within 15 calendar days of such notice. The 15-day period starts once unsuccessful bidders are notified. Once a request is made by the bidder, the University must schedule a debriefing within a reasonable time of such request. Unless the campus and bidder mutually agree to use another method such as by telephone, video conference or another type of electronic communication the debriefing must be conducted in person with the bidder.

(2) This procurement is subject to SUNY Procedure Item 7561, Contract Award Protest Procedure.

Section 19.2 Proposal Confidentiality

(1) All proposals and qualifications submitted for the University's consideration will be held in confidence. However, the resulting contract is subject to the New York State Freedom of Information Law (FOIL). Therefore, if an Bidder believes that any information in its proposal constitutes a trade secret or should otherwise be treated as confidential and wishes such information not to be disclosed the Bidder shall submit with its proposal a separate letter to the designated contact. The letter shall specifically identify the page number(s), line(s) or other appropriate designation(s) containing such information, explaining in detail why such information is a trade secret and formally requesting that such information be kept confidential. Failure by a Bidder to submit such a letter will constitute a waiver by the Bidder of any rights it may have under Section 89(5) of the Public Officers' Law relating to protection of trade secrets.

(2) The proprietary nature of the information designated confidential by the Bidder may be subject to disclosure if ordered by a court of competent jurisdiction. A request that an entire proposal be kept confidential is not advisable since a proposal cannot reasonably consist of all data subject to FOIL proprietary status.

Section 19.3 Information Security Breach and Notification Act

(1) The Bidder shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law Section 899-aa and State Technology Law, Section 208). The Bidder shall be liable for the costs associated with such breach if caused by its negligent or willful acts or omissions, or the negligent or willful acts or omissions of its agents, officers, employees, or subcontractors.

Section 19.4 State Finance Law §§ 139-j and 139-k

(1) State Finance Law §§139-j and 139-k imposes certain restrictions on communications between the University and a Bidder during the procurement process. During the restricted period the Bidder is restricted from making contacts to other than designated contact unless it is a contact that is included among certain statutory exceptions set forth in State Finance Law §139-j(3)(a). The restricted period is from the earliest notice of intent to solicit offers through final award and approval of the Contract.

(2) University employees and their designated representatives are also required to obtain certain information when contacted during the restricted period and make a determination of the responsibility of the Bidder pursuant to these two statutes. Certain findings of non-responsibility can result in rejection for contract award and in the event of two findings within a 4-year period the Bidder is debarred from obtaining government procurement contracts.

Section 19.5 State Finance Law §§ 139-l

(1) Pursuant to N.Y. State Finance Law §139-l, every bid made on or after January 1, 2019 to the State of any public department or agency thereof, where competitive bidding is required by statute, rule or regulation, for work or services performed or to be performed or goods sold or to be sold, and where otherwise required by such public department or agency, shall contain a certification that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of N.Y. State Labor Law §201-g.

(2) N.Y. State Labor Law §201-g provides requirements for such policy and training and directs the Department of Labor, in consultation with the Division of Human Rights, to create and publish a model sexual harassment prevention guidance document, sexual harassment prevent policy and sexual harassment training program that employers may utilize to meet the requirements of N.Y. State Labor Law §201-g. The model sexual harassment prevention policy, model sexual harassment training materials, and further guidance for employers, can be found online at the following URL: https://www.ny.gov/combating-sexual-harassment-workplace/employers.

(3) Pursuant to N.Y. State Finance Law §139-l, any bid by a corporate bidder containing the certification required above shall be deemed to have been authorized by the board of directors of such bidder, and such authorization shall be deemed to include the signing and submission of such bid and the inclusion therein of such statement as the act and deed of the bidder.

(4) If the bidder cannot make the required certification, such bidder shall so state and shall furnish with the bid a signed statement that sets forth in detail the reasons that the bidder cannot make the certification. After review and consideration of such statement, SUNY may reject the bid or may decide that there are sufficient reasons to accept the bid without such certification.

(5) All Bidders must sign and submit the certification attached to this IFB, SUNY Form 7554-20.

Section 20 Additional Terms and Conditions

(1) The terms and conditions of the State University of New York Construction Agreement (Form 7554-09) shall apply and is provided as an attachment to this IFB.

(2) The resulting agreement shall be binding upon its execution by both parties and, if required by New York State law, upon the approval of the Attorney General and the Office of the State Comptroller.

(3) The agreement may be revised at any time upon mutual consent of the parties in writing. Such written consent will not be effective until signed by both parties and, if required by New York State law, approved by the Attorney General and the Office of the State Comptroller.

(4) The relationship of the Successful Bidder to the University shall be that of independent contractor.

(5) Compliance with the post-employment restrictions of the Ethics in Government Act is required.

(6) The submission of a proposal constitutes a binding offer to perform and provide said services.

(7) In the event the Successful Bidder uses partners, subcontracts or subcontractors, the Successful Bidder will remain responsible for compliance with all specifications and performance of all obligations under the contract resulting from this IFB. For the resulting agreement, the Successful Bidder will be the prime contractor.

(8) The University will not be liable for any costs associated with the preparation, transmittal, or presentation of any proposals or materials submitted in response to this IFB.

(9) Public announcements or news releases regarding this IFB or any subsequent award of a contract must not be made by any Bidder without the prior written approval of SUNY.

(10) The Successful Bidder is responsible for compliance with all applicable rules and regulations pertaining to cities, towns, counties, and State where the services are provided, and all other laws applicable to the performance of the resulting contract. The Successful Offeror shall provide all necessary safeguards for safety and protection as set forth by the United States Department of Labor, Occupational Safety and Health Administration.

(11) The Successful Bidder will be responsible for the work, direction and compensation of its employees, consultants, agents, and contractors. Nothing in the resulting agreement or the performance thereof by the Successful Bidder will impose any liability or duty whatsoever on the University including, but not limited to, any liability for taxes, compensation, commissions, Workers' Compensation, disability benefits, Social Security, or other employee benefits for any person or entity.

(12) In the event the Successful Bidder is required to be reimbursed for travel, Bidder shall be reimbursed at rates not to exceed the current NYS Schedule of Allowable Reimbursable Travel Expenses. Refer to the U.S. Government Administration Rates for Travel at: http://www.gsa.gov

(13) In addition, the University reserves the right to:

a. Not accept any and all proposals received in response to this IFB, waive requirements or amend this IFB upon notification to all bidders, waive minor irregularities or adjust or correct cost or cost figures with the concurrence of the bidder if mathematical or typographical errors exist.

b. To terminate any resulting contract for: (1) unavailability of funds; (2) cause; (3) convenience; (4) in the event it is found that the certification filed by the Bidder in accordance with State Finance Law §§139-j and 139-k are found to be intentionally false or intentionally incomplete; and if applicable, the Department of Taxation and Finance Contractor Certification Form ST-220CA was false or incomplete. Upon such finding the University may exercise its termination right by providing written notification to the Bidder in accordance with the written notification terms of the contract.

c. Request certified audited financial statements for the past three (3) completed fiscal years and/or other appropriate supplementation including, but not limited to, interim financial statements and credit reports.

d. Contact any or all references.

e. Request clarifications from Bidders for purposes of assuring a full understanding of responsiveness, and further to permit revisions from all Bidders determined to be susceptible to being selected for contract award, prior to award.

e. Advise Bidder of any objectionable employee(s) and/or subcontractor(s) and request their removal from the project. Such removal shall not be reasonably withheld by the Bidder.

Section 21 Requirements for Construction Activities to Address Public Health or Safety

(1) The Bidder agrees it is responsible for complying with any and all requirements issued by federal, state or local entities, including but not limited to New York State Governor Office Executive Orders, New York State Department of Health rules, regulations and guidance, and other New York State or State University of New York laws, rules, regulations or requirements that may be issued and/or amended during the bidding and/or performance of work on this Project.

(2) With respect to the COVID-19 pandemic, Bidder specifically acknowledges and agrees that the NYS Interim COVID-19 Guidance for Construction Projects is made a part of the contract work for this Project, as set forth in General Requirements. Bidder affirms that all costs and time associated with compliance with the current guidance are included in its bid. The current NYS Interim COVID-19 Guidance for Construction Projects for is available at the following website: https://forward.ny.gov/industries-reopening-phase#phase-one-construction. Notwithstanding the foregoing, Bidder agrees to comply with the Guidance as it may be amended or superseded in the future.

_____
NAME OF BIDDER

_____
ADDRESS OF BIDDER

PROPOSAL
FOR

Project Number: **SU-071321** Date: **November 3, 2021**
Project Name: **Studio A Renovation**

TO THE STATE UNIVERSITY OF NEW YORK:

1. **The Work Proposed Herein Will Be Completed Within the timeframe stated on page one of the Agreement.** In the event the bidder fails to complete such work by said date or dates, or within the time to which such completion may have been extended in accordance with the Contract Documents, the bidder agrees to pay the University liquidated damages in an amount equal to the values indicate in the Liquidated Damages Schedule below for each calendar day of delay in completing the work.

LIQUIDATED DAMAGES SCHEDULE

Contract Amount	***Liquidated Damages***
Under $100,000	**$100/day**
$100,000-$499,999	**$200/day**
$500,000-$999,999	**$300/day**
$1MM-$1,999,999	**$400/day**
$2MM-$3,499,999	**$500/day**
$3.5MM-$5MM	**$700/day**
Over $5MM (to be determined by the University in each instance)	**$_____/day**

2. The bidder hereby declares that it has carefully examined all Bidding and Contract Documents and that it has personally inspected the actual location of the work, together with the local sources of supply, has satisfied itself as to all the quantities and conditions, and understands that in signing this Proposal, it waives all right to plead any misunderstanding regarding the same.

3. The bidder further understands and agrees that it is to do, perform and complete all work in accordance with the Contract Documents and to accept in full compensation therefore the amount of the Total Bid, modified by such additive or deductive alternates, if any, as are accepted by the University.

4. The bidder further agrees to accept the unit prices, if any, set forth in paragraph (5) of this proposal, except as the same may be modified pursuant to the provisions of Section (5) of the Information to Bidders, as full payment for the amount of the credit to the University for any deletions, additions, modifications or changes to the portion or portions of work covered by said unit prices.

5. **BID CALCULATION**

a. **BASE BID** *(does not include allowances)*

$_____
(in numbers)

_____
(in words)

b. **ALLOWANCES:** In accordance with the Schedule I and Section 4.05 of Agreement, the bidder further agrees to the following additions to the Base Bid:

Work or Materials Description	Amount in Words	Amount in Figures
Field order allowance	Twenty-five thousand three hundred forty dollars	$ 25,340.00

c. **TOTAL BID** *(base bid + allowances = total bid)*

$_____
(in numbers)

_____
(in words)

d. **ALTERNATES**: In accordance with Section B of the General Requirements the bidder proposes the following additions to or deductions from the Total Bid for the alternates listed below:

Alternate Number	Add/ Deduct	Amount in Words	Amount in Figures

e. **UNIT PRICES**: In accordance with Section (5) paragraph (2) of the Information to Bidders and Section 4.04 of the Agreement the bidder or the University may insert unit prices for the work or materials listed below for clarification.

Work or Materials Description	Amount in Words	Amount in Figures

6. 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: (a) 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; (b) unless otherwise required by law, the prices 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 (c) no attempt has been made or will be made by the bidder to induce any person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

   A bid shall not be considered for award nor shall any award be made where (a), (b) and (c) 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 bid a signed statement which sets forth in detail the reasons therefor. Where (a), (b), and (c) above shall have not been complied with, the bid shall not be considered for award nor shall any award be made unless the Campus President, or designee, or Vice Chancellor for Capital Facilities, or designee, determines that such disclosure was not made for purposes 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 this Section.

7. The bidder agrees that if awarded the Contract, it will commence work within (10) calendar days after date of receipt of a fully executed Agreement and that it will fully complete the work by the date stated herein.

8. The bidder acknowledges the receipt of the following addenda, but agrees that it is bound by all addenda whether or not listed herein.

Addendum Number	Date	Addendum Number	Date
_____	___/___/___	_____	___/___/___
_____	___/___/___	_____	___/___/___
_____	___/___/___	_____	___/___/___

9. The bidder submits herewith bid security in an amount not less than five (5) percent of the Total Bid. In the event that (a) the bidder's Total Bid is the lowest one submitted and the bidder does not timely provide the Post-Bid Information required by the Information for Bidders or (b) this Proposal is accepted by the University and the bidder shall refuse or neglect, within ten (10) calendar days after date of receipt of Agreement, to execute and deliver said Agreement in the form provided herein, or to execute and deliver a Performance Bond and a Labor and Material Bond in the amounts required and in the form prescribed, the bidder shall be liable to the University, as liquidated damages, for the amount of the bid security or the difference between the Total Bid of the bidder and the Total Bid of the bidder submitting the next lowest bid, whichever sum shall be higher, otherwise the total amount of the bid security will be returned to the bidder in accordance with the provisions set forth in the Information for Bidders. The University may apply the bid security in full or partial payments, as the case may be, of said liquidated damages and in the event the bid security is less than the amount of liquidated damages to which the University is entitled, the bidder shall pay the difference, upon demand, to the University.

10. The bidder certifies that all wood products that are to be used in the performance of this Contract shall be in accordance with the Specifications and provisions of Section 167 b. of the State Finance Law which Section prohibits the purchase and use of tropical hardwoods.

11. The bidder affirms that it understands and agrees to comply with the procedures of the Fund relative to permissible contacts as required by Sections 139-j(3) and 139-j-(6)(b) of the State Finance Law.

12. The bidder certifies that all information provided or to be provided to the University in connection with this procurement is, as required by Section 139-k of the State Finance Law, complete, true and accurate.

Dated _____/_____/_____

Firm's Federal ID Number or
Social Security Number as applicable _____

Legal name of person, partnership, joint venture or corporation:

_____

By_____
(signature)

Title_____

ACKNOWLEDGMENT FOR THE PROPOSAL

THE LEGAL ADDRESS OF THE BIDDER

_____

_____

_____

_____

Telephone No._____ Facsimile No._____

If a Corporation

Name Address

_____PRESIDENT _____

_____SECRETARY _____

_____TREASURER _____

If a Partnership

Name of Partners Address

_____ _____

_____ _____

_____ _____

If a Joint Venture

Name of Members Address

_____ _____

_____ _____

_____ _____

If an Individual

Name of Individual Address

_____ _____

Attachment A – List of Completed Similar Construction Projects

Bidder Name: **Project No.:**

Bidders must provide three (3) example projects completed in the past five (5) years in which the Bidder served as the prime contractor. Example projects must be of similar size, scope and complexity to the project currently being bid, as further described in the Description of Work. Each project must include the Owner/Agency, Award Date, Contract Amount, Date Completed, Contact Person, Telephone number of the contact, Architect and/or Engineer's Name, Contract Number, Contact Email, and the Project Title and a brief scope description. Reference contacts may be used to verify project size, scope, dollar value, percentages and quality of performance.

1.	Agency/Owner			Award Date	Contract Amount / Date Completed
	Agency/Owner Contact Person		Telephone No.	Designer Architect and /or Design Engineer	
	Contract No.	Contact Email	Project Title & Scope		
2.	Agency/Owner			Award Date	Contract Amount / Date Completed
	Agency/Owner Contact Person		Telephone No.	Designer Architect and /or Design Engineer	
	Contract No.	Contact Email	Project Title & Scope		
3.	Agency/Owner			Award Date	Contract Amount / Date Completed
	Agency/Owner Contact Person		Telephone No.	Designer Architect and /or Design Engineer	
	Contract No.	Contact Email	Project Title & Scope		
Completed By:				Phone Number: Email: Date:	

Division 1 - General Requirements

SECTION A - Description of Work

1. Work to be Done

The work to be done under the Contract, in accordance with the Contract Documents, consists of performing, installing, furnishing and supplying all materials, equipment, labor and incidentals necessary or convenient for the construction of Project Number **SU-071321**, titled **Studio A Renovation** and carry out all of the duties and obligations imposed upon the Contractor by the Contract Documents.

The main features of the work shall include, but not be limited to the following:

A full renovation of the main recording studio (Studio A) in the Music Building. Studio A is roughly 1,300 square feet and is divided into a recording space and teaching/control room space.

2. Work Not Included:

Work not included in the work of the Contract are those items marked "N.I.C"; movable furnishings, except those specifically specified or indicated on the Drawings; and items marked "by others".

SECTION B - Alternates

1. General

a. Refer to Proposal Form. State thereon the amount to be added to or deducted from the Total Bid for the Alternates described herein.

b. Extent and details of the Alternates are indicated on the Drawings and described in the Specifications.

c. Where reference is made in the description of the Alternate to products, materials, or workmanship, the specification requirements applicable to similar products, materials or workmanship in the Total Bid shall govern the products, materials, and workmanship of the Alternate as if these specification requirements were included in full in the description of the Alternates.

2. Alternates - NONE

SECTION C - Special Conditions

1. Time Progress Schedule

a. The Contractor shall schedule the Work for expeditious completion in accordance with Section 3.01(2) of the Agreement. The proposed schedule must be established in cooperation with the Campus and account for Campus calendar restrictions listed in this section that affect the Contractor's access to the work areas and construction activities. At each periodic meeting, the Time Progress Schedule required by Section 3.02 of the Agreement shall be reviewed for compliance with phasing requirements. Revise and update the Time Progress Schedule to properly depict the work required to maintain continuity of campus operations.

b. First phases of work shall include appropriate time in the schedule for: (1) understanding Campus operations, training crews, acclimating trades and Campus to sequence and apportionment of

activities; (2) additional meetings (up to twice a week during the first twelve weeks after the Notice to Proceed) with the Owner, consultant and the Contractor's principals, project manager and those of its significant subcontractors; (3) re-sequencing activities to recover from start-up delays in the progressive operation of interrelated work and (4) other activities commonly associated with the start-up of field work.

c. Academic Calendar: The Contractor is advised that the Campus intends to maintain a full institutional program throughout the Project duration. The Campus will make continuous use of adjacent spaces, buildings and site, except where work is scheduled or specified to occur. All Contract work must be scheduled and performed without causing unscheduled interruption of the normal institutional activities and processes. The Contractor shall coordinate his work with the following Campus Calendar, and No Utility shutdowns will be permitted during Registration, Study Periods, Exam Periods, or Commencement.

https://www.purchase.edu/offices/registrar/academic-calendar/2021-22/

d. The work site will be available to begin construction immediately upon Notice to Proceed. Unless otherwise indicated, normal working hours on the campus are between 7:00 AM and 4:00 PM. Sequence the work in phases to meet the following interim milestones dates:

e. On the Date of Substantial Completion in the Proposal, access to the work area for any uncompleted work and for punch list items shall be restricted to after 5:00 PM and prior to 7:00 AM and comply with the following:

1. Methods of performing work shall not hinder or disrupt the Campus' occupancy, reduce Campus provided levels of cleanliness and ambient environmental conditions and affect building systems, services, and utilities serving the building unless, upon completion of each shift's work that is performed outside of normal Campus work hours, the Contractor provides cleaning to return the work areas to a similar level of cleanliness as normally provided by the Campus, returns spaces to their normal ambient environmental conditions and restores building systems, services, and utilities serving the occupancy.

2. No material or equipment shall remain inside the building unless in the active use and control of Contractor personnel.

3. The Contractor shall provide all utility relocations and re-routings necessary to maintain the existing utilities at their current level of service, including limiting their shutdowns for tie-ins and cutovers to those periods specified. All new work shall be in place, tested and accepted prior to performing a shutdown for the required tie in.

f. Time Delay Allowance: In addition to the requirements of Article III of the Agreement, the base bid contract duration to perform the work specified in the proposal shall include not less than five (5) consecutive and/or non-consecutive eight hour working days in the Time Progress Schedule for delays that are of no fault of the Contractor or any of its subcontractors or suppliers, or caused by events or conditions that could not be reasonably anticipated. Provide notice of delay per Section 3.04 and request use of this time allowance. When approved by Consultant, the time allowance is expended for each workday that the contractor is unable to work and all delay time used is tracked in the Time Progress Schedule. After this base bid time allowance for delay is expended, comply with the requirements of Article III for any additional delays.

2. Cutting and Patching

a. The Contractor shall do all cutting, fitting, and patching of its work that may be required to make its several parts come together properly and fitted as shown upon or reasonably implied from the Drawings and Specifications for the completed project.

b. Any cost caused by defective or ill-timed work shall be borne by the Contractor. Except as otherwise expressly provided in the Contract Documents, the Contractor shall not cut or alter the work of any other Contractor or existing work without the consent of the University.

c. Existing construction, finishes, equipment, wiring, etc., that is to remain and which is damaged or defaced by reason of work done under this contract shall be restored by the Contractor to a condition satisfactory to the University, or replaced with new, at no additional cost.

d. Existing surfaces, materials, and work shall be prepared as necessary to receive the new installations. Such preparatory work shall be as required by the conditions and in each case shall be subject to approval by the University.

e. Newly exposed work or surfaces which are presently concealed shall be made to match existing corresponding or adjoining new surfaces as directed, and the materials and methods to be employed shall be subject to approval by the University.

f. All new, altered, or restored work in the building shall match existing corresponding work in the material, construction finish, etc., unless otherwise specified or required by the drawings.

3. Clean-Up

a. Periodic Cleaning: The Contractor shall at all times during the progress of the work keep the Site free from accumulation of waste matter or rubbish and shall confine its apparatus, materials and operations of its workmen to limits prescribed by law or by the Contract Limit Lines, except as the latter may be extended with the approval of the University. Cleaning of the structure(s), once enclosed, must be performed daily and removal of waste matter or rubbish must be performed at least once a week.

b. Final Clean Up: Upon completion of the work covered by the Contract, the Contractor shall leave the completed project ready for use without the need of further cleaning of any kind and with all work in new condition and perfect order. In addition, upon completion of all work, the Contractor shall remove from the vicinity of the work and from the property owned or occupied by the State of New York, the State University of New York or the University, all plant, buildings, rubbish, unused materials, concrete forms and other materials belonging to it or used under its direction during construction or impairing the use or appearance of the property and shall restore such areas affected by the work to their original condition, and, in the event of its failure to do so, the same shall be removed by the University at the expense of the Contractor, and it and its surety shall be liable therefor.

4. Temporary Access and Parking

See supplemental Special Conditions for Construction.

5. Field Meetings

Periodic job meetings will be scheduled by the Consultant and the University during the course of construction. The Contractor, and, upon request of the Consultant and the University, its principal subcontractors and manufacturer's representatives, shall attend such meetings and be prepared to furnish answers to questions on progress, workmanship, or any other subject on which the Consultant and the University might reasonably require information.

6. Operating Instructions and Manuals

The Contractor shall furnish three (3) complete sets of operating instructions and manuals which shall include definite and specific instructions on all mechanical and electrical systems involved in the Project. Said instructions and manuals should set forth: (1) the manner of operation; (2) the necessary precautions and care to be followed: (3) periodic prevention maintenance requirements; and (4) a complete set of spare

parts lists, catalogs, service manuals and manufacturing data on said systems. Said instructions and manuals are to be made available by the Contractor for review and comment by the University a minimum of six (6) weeks prior to the scheduled completion of the Project.

7. Utility Shutdowns and Cut Overs

a. Except as otherwise expressly provided in the Contract Documents, the Contractor shall be responsible for submitting to the University, for its approval, a proposed schedule of all utility shutdowns and Cut overs of all types which will be required to complete the Project; said schedule should contain a minimum of two (2) week's advance notice prior to the time of the proposed shutdown and cut over. Most campuses of the State University of New York are in full operation 12 months of the year, and shutdowns and Cut overs, depending upon their type, generally must be scheduled on weekends, at night, or during holiday periods. The contract consideration is deemed to include all necessary overtime and all premium time, if any, that is required by the Contractor to complete the shutdowns or Cut overs.

b. Temporary Connections: In the event the Contractor shall disrupt any existing services, the Contractor shall immediately make temporary connection to place such service back into operation and maintain the temporary connection until the Contractor makes the permanent connection. All work must be acceptable to the University.

8. Temporary Power for Construction Activities

Electrical energy will be available at no cost to the Contractor from existing outlets or panels from locations approved by the College. This power may be used for small power tools (not exceeding 1/2 HP), etc., and the Contractor shall not exceed the capacity of the existing circuits being used. The Contractor shall be responsible for providing all necessary connections, cables, etc. and removal of the same at completion of construction with approval from the University. The Contractor shall in no way modify the existing circuits at the panel boards to increase capacities of the circuits. If the required power load exceeds the capacities of the available power sources, the Contractor shall be responsible and pay for furnishing and installing all necessary temporary power poles, cables, fused disconnect switches, transformers and electric meters necessary to provide a temporary power system for the project, and remove the same at completion. Install all temporary wiring and equipment and make all connections in conformity with the National Electrical Code. Make all replacements required by temporary use of the permanent wiring system. Provide ground fault protection.

9. Sanitary Facilities

The Contractor will be permitted to use existing toilet and janitor closet facilities as designated by the College provided the existing facilities are not misused, defaced, or left in an unsanitary condition. If the University deems that the existing facilities have been subject to misuse or left unsanitary, the Contractor shall be informed and caused to install and maintain (at its own cost) temporary, sanitary facilities at approved locations. The Contractor shall also be held responsible for the cost of cleaning and repair of any damage to said existing facilities and adherence to health and sanitary codes of the State of New York.

10. Temporary Heat

a. In those locations where it is required by the conditions of the work, the Contractor shall provide and pay for all temporary heating, coverings and enclosures necessary to properly protect all work and materials against damage by dampness and cold, dry out the work, and facilitate the completion thereof. Fuel, equipment, materials, operating personnel and the methods used therefor shall be at all times satisfactory to the University and adequate for the purpose intended. The Contractor shall maintain the critical installation temperatures, provided in the technical provisions of the specifications hereof, for all work in those areas where the same is being performed.

b. Maintenance of proper heating, ventilation and adequate drying out of the work is the responsibility of the Contractor. Any work damaged by dampness, insufficient or abnormal heating shall be replaced to the satisfaction of the University by and at the sole cost and expense of the Contractor.

c. The Contractor shall provide all necessary, temporary heating for the efficient and effective work by itself and all trades engaged in the work. Unless otherwise specified, the minimum temperature shall be 50 degrees F at all places where work is actually being performed within the project (where enclosed). Before and during the placing of wood finish and the application of other interior finishing, varnishing, painting, etc., and until final acceptance by the University of all work covered by the Contract, the Contractor shall, unless otherwise specified in the Contract Documents, provide sufficient heat to produce a temperature of not less than 68 degrees F nor more than 78 degrees F.

11. Temporary Light

The contractor shall install, maintain and remove Underwriter's Label temporary lighting sockets, light bulbs, and intermittent power sockets as approved by the University. The minimum temporary lighting to be provided is at the rate of 1/4 watt per square foot and be maintained for 24 hours, 7 days per week at stairs and exit corridors; in all other spaces, temporary lighting is to be maintained during working hours. Installation shall be in accordance with the National Electric Code.

12. Temporary Water for Construction Purposes

Water for construction is available through the campus system without charge to the Contractor from location designated by the College. The Contractor shall obtain the necessary permission, make all connections, as required, furnish and install all pipes and fittings, and remove the same at completion of work. The Contractor must provide for waste water discharge and shall take due care to prevent damage to existing structures or site and the waste of water. All pipes and fittings must be maintained in perfect condition at all times.

13. Conducting Work

a. All work is to be conducted in such a manner as to cause a minimum degree of interference with the College's operation and academic schedule.

b. Safe and direct entrance to and exiting from the existing buildings shall be maintained at all times during regular hours while construction is in progress.

c. No construction work will start in any area until the Contractor has all the required materials on-site.

d. The Contractor and its employees shall comply with College regulations governing conduct, access to the premises, and operation of equipment.

e. The building shall not be left "open" overnight or during any period of inclement weather. Temporary weather tight closures shall be provided for/by the Contractor to protect the structure and its contents.

14. Safety and Protective Facilities

a. The Contractor shall provide the necessary safeguards to prevent accidents, to avoid all necessary hazards and protect the public, the Staff, students, the work and property at all times, including Saturdays, Sundays, holidays and other times when no work is being done.

b. The Contractor shall erect, maintain and remove appropriate barriers or other devices, including

mechanical ventilation systems, as required by the conditions of the work for the protection of users of the project area, the protection of the work being done, or the containment of dust and debris. All such barriers or devices shall be provided in conformance with all applicable codes, laws and regulations, including OSHA and National Fire Prevention Association 241, for safeguarding of structures during construction.

15. Protection of Existing Structures, Vegetation and Utilities

The Contractor, during the course of its work, shall not damage any buildings, structures and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains and electric power and lighting and telephone cables, lawns, curbs, plants and other improvements. Any damage resulting from the Contractor's operations shall be repaired or replaced at its expense.

16. Abbreviations and References

The following abbreviations may be used in these Specifications:

N.A.	Not Applicable
N.I.C	Not in Contract.
Fed. Spec. or F.S.	Federal Specifications
SUCF	State University Construction Fund
University or SUNY	State University of New York
College	A Campus of the State University of New York

17. Use of Elevators

The Contractor shall be permitted to make temporary use of elevators designated by the University and provided such use does not interfere with the normal activities of the College. Large and heavy items shall not be placed in elevators, and suitable padding shall be provided whenever a cab is used for construction purposes. Elevator pits shall be kept free of debris and dust by frequent cleaning out. The elevators shall be restored to original condition satisfactory to the University at the end of construction activities. Use of the top of the elevator may be permitted after obtaining approval of the University.

18. Salvage of Materials

Remove and legally dispose of all debris and other materials resulting from the alterations to State University property. The following items shall remain the property of the University and shall be stored at the site as directed by the University:

19. Storage of Materials

a. The Contractor shall store materials and equipment within the contract limits in areas on the site as designated by the University.

b. All materials shall be stored in a neat and orderly manner, and shall be protected against the weather by raised floored weatherproof temporary storage facility or trailer.

c. Security for stored materials shall be the responsibility of the Contractor.

d. Storage of materials is not permitted on the roof of any building.

20. Shop Drawings and Samples - (Refer to Section 2.19 of the Agreement)

a. The Contractor shall submit to the University for its approval five (5) sets of prints of all shop drawings required by the specifications. Those marked:

"REJECTED" are not in accordance with the Contract Documents and shall be resubmitted.

"REVISE AND RESUBMIT" Contractor shall correct and resubmit.

"MAKE CORRECTIONS NOTED": The contractor shall comply with corrections and may proceed.
Resubmittal is not required.

"APPROVED - NO EXCEPTIONS TAKEN": The contractor may proceed.

b. All shop drawings and/or submittals used on the construction site must bear the impression of the consultant's review stamp as well as the General Contractor's review stamp, indicating the status of review and the date of review.

c. All shop drawings shall reflect actual site conditions and accurate field dimensions. Dimensioned shop drawings shall be submitted for all fabricated items. Incomplete submittals will be rejected without review.

d. All shop drawings, submittals and samples shall include:
   1). Date and revision dates.
   2). Project title and number.
   3). Names of:
      a). Contractor
      b). Subcontractor
      c). Supplier
      d). Manufacturer
   4). Identification of products or materials: Include Department of State (DOS) file number, manufacturers' name and market name of all covered products and applicable materials in accordance with Part 1120 of the Code. This information may be obtained by contacting the DOS, Office of Fire Prevention and Control: 518 474-6746 [voice] and 518 474-3240 [FAX])

21. U.S. Steel

All structural steel, reinforcing steel, or other major steel items to be incorporated in the work shall, if this Contract is in excess of $100,000, be produced or made in whole or substantial part in the United States, its territories or possessions.

22. Non-Asbestos Products

a. All materials specified herein shall contain no asbestos.

b. Provide "Contains No Asbestos" permanent labels applied to the exterior jacket of all pipe insulation at 20-foot intervals with a minimum of one (1) label for each service in each work area.

23. Material Safety Data Sheet

The contractor shall submit MSDS (Material Safety Data Sheet) for all chemicals, solvents, and materials specified or proposed to be used on this project.

24. Architect's/Engineer's Seal

In accordance with Rules and Regulations of the New York State Education Law, Title 8, Part 69.5(b), to all plans, specifications and reports to which the seal of an architect has been applied, there shall also be applied a stamp with appropriate wording warning that it is a violation of the law for any person, unless acting under the direction of a licensed architect, to alter an item in any way. If an item bearing the seal of an architect is altered, the altering architect shall affix to his item the seal and the notation "altered by" followed by his signature and the date of such alteration, and a specific description of the alteration.

25. Construction Permit

The Code Compliance Manager for the State University Campus will, as required by law, issue a Construction Permit for this Project. The project is not subject to any local building code or permit requirements, except for work that the Contractor is to perform on property located outside of the boundaries of the campuses of the State University of New York.

26. Other Contracts

There may be other contracts let for work to be done in adjacent areas and, as such, this Contractor and such other contractors shall coordinate their work to conform with progressive operation of all the work covered by such contracts, and afford each other reasonable opportunities for the introduction and storage of their supplies, materials, equipment, and the execution of their work.

27. Asbestos

If the work to be done under this contract contains the abatement of asbestos the following shall apply:

a. Applicable Regulations - All work to be done under this Contract shall be in compliance with Part 56 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York (cited as 12 NYCRR Part 56) as amended effective November 9, 1994.

b. Applicable Variance - The abatement contractor is responsible for obtaining any variance not issued to date that he feels may be applicable to the policies/procedures as set forth in 12 NYCRR Part 56.

c. Owner Project Fact Sheet -The Contractor shall complete and submit as much information as possible on the Asbestos Material Fact Sheet to the University in triplicate prior to the project startup completion of the Fact Sheet shall be submitted prior to acceptance.

d. Patent Infringement - The State University of New York and the State University Construction Fund have been given notice by a law firm representing GPAC, Inc. that the use of its process/procedure for asbestos containment and removal constitutes a patent infringement. All potential contractors are hereby notified that they may have to obtain a license to use certain patented Negative Air Containment systems, and that any liability of the University in connection therewith is covered by Section 2.21 of the Agreement. Therefore, all potential contractors are hereby notified that after opening of the bids they must advise the University as to the system they intend to use for Negative Air Containment and provide the University with either a copy of their license to use the same or written documentation, signed by an authorized officer of their surety, that their performance bond guarantees the Contractor's indemnification covering patent claims.

e. Air Monitoring - All work to be done under this Contract shall be in compliance with Part 56 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York (cited as 12 NYCRR Part 56), as currently amended, and applicable federal and state regulations.

The Owner shall be responsible for hiring and paying an independent third party firm to perform the requirements of air monitoring as called for in 12 NYCRR Part 56 and as permitted in Section 2.17 of the Agreement.

f. Testing - The University and Campus reserve the right to employ an independent testing laboratory to perform testing on the work and air sampling. The Contractor shall be required to cooperate with the testing laboratory.

g. Disposal Procedures - It is the responsibility of the asbestos contractor to determine current waste handling, transportation and disposal regulations for the work site and for each waste disposal landfill. The asbestos contractor must comply fully with these regulations, all appropriate U.S. Department of Transportation, EPA and Federal, State and local entities' regulations, and all other than current legal requirements. Submit originals or copies of all pertinent manifests in triplicate to the University.

h. Submittals - Prior to commencement of the work on this project, the Contractor must submit the following to the University:

1). Copy of original insurance policy.

2). Copy of Department of Labor notification.

3). Owner Fact Sheet.

4). Copy of EPA notification.

i. Special Requirements -. 1) Size, location, and quantities of all pipes, joints, ducts, valves, tees, etc. must be field verified by all prospective bidders. Information given on the drawings and specifications is for general orientation and information only.

2) The Contractor shall have at least one English-speaking supervisor on the site at all times while the project is in progress.

3) Prior to the commencement of work involving asbestos demolition, removal, renovation, the Contractor must submit to the University the name of its on-site asbestos supervisor responsible for such operations, together with documentation that such supervisor has completed an Environmental Protection Agency-approved training course for asbestos supervisors.

28. COVID-19 Contractor Requirements and Guidance for Construction Jobsites

The Contractor will comply with NYS DOH Interim COVID-19 Guidance for Construction Projects, “Guidance”, as may be amended or superseded, which is made a part of the contract work for this Project. All costs and time associated with compliance with the current Guidance are included in the Contract consideration in Article IV of the Agreement. The current Guidance for Construction Projects is available at the following website:
https://forward.ny.gov/industries-reopening-phase#phase-one-construction

29. **Wage Rates and Supplements**

The following are the rates of wages and supplements determined by the Industrial Commissioner of the State of New York as prevailing in the locality of the site at which the work will be performed:

Wage Schedules can be accessed online using PRC # 2021010041 at https://apps.labor.ny.gov/wpp/publicViewProject.do?method=showIt&id=1520559.

If the Contractor is unable to access the prevailing wage schedule for the PRC# listed above, please contact the University for a copy of the wage rate schedule.

Appendix –
Special Conditions for Construction

Part 1 – Use of Premise

1.1 General

A. Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. *For purposes of this provision, "site" shall include all existing structures.*

B. The Building in which the Work is to be performed is currently occupied by residential areas, offices and/or classrooms. Each Contractor shall have limited use of premises for construction operations, including use of Project site, during the construction period. Each Contractor's use of premises is limited only as outlined in this section and/or any other section of the specifications, or at the College's discretion, to perform work or to retain other contractors on portions of Project.

C. Coordination with Other Contractors:
   1). The Contractor will need to have their portion of the Work coordinated with other Contractors working on the site so that their work conforms to the progressive operation of all the work covered under other contracts that the College has let on this site.
   2). Each Contractor shall afford other Contractors reasonable opportunities for the introduction and storage of their supplies, materials, equipment, and execution of their work.
   3). If the Contractor or such other contractors contend that their work of the progress thereof is being interfered with by the acts or omissions of the others or that there is a failure to coordinate or properly arrange the sequence of the work on the part of the Contractor or such other contractors, they shall, within five (5) working days of the commencement of such interference or failure of coordination or failure to perform work in proper sequence, give written notification to the College of such contention. Upon receipt of such notification or on its own initiative, the College shall investigate the situation and issue such instructions to the Contractor or such other contractors with respect thereto as it may deem proper. The College shall determine the rights of the Contractor and of such other contractors and the sequence of work necessary to expedite the completion of the work covered by said other contracts.

D. All work is to be conducted in such a manner as to cause a minimum degree of interference with the College's operations and academic schedule. Contractor is to coordinate their work with the College's classroom schedule.

E. The Contractor and its employees shall comply with all College regulations governing conduct, access to the premises, and operation of equipment.

F. Maintain all paths of egress and keep clear of all materials and debris.

G. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, and other adjacent occupied or used facilities without written permission from College.

H. Should it become necessary, in the judgment of the College, at any time during the course of the Work to move materials which are stored on the site and equipment which has been temporarily placed thereon, the Contractor upon request of the College shall move them or cause them to be moved at its sole cost and expense; provided, however, if materials and equipment that have been stored or placed by the Contractor at a location on the site expressly approved, in writing, by the College and the same are moved or caused to be moved by the Contractor at the College's request, such removal shall be deemed extra work and the Contractor shall be compensated.

1.2 Campus Regulations

A. The contractor and his/her employees, subcontractors, etc., will not fraternize with any building or campus occupants. This includes but is not limited to students, faculty, and employees of the State other than those designated, visitors and guests. At no time will it be appropriate to say anything derogatory to the above referenced individuals. Harassment, verbal or otherwise, of the above referenced individuals will **not** be tolerated. If an incident arises, the Contractor will be directed to **permanently remove** the employee from the site.

B. No drugs are permitted on campus.

C. No smoking is permitted in the buildings.

D. The contractor, employees and sub-contractors are required to stay within the construction boundary lines at all times.

E. The contractor, employees, and sub-contractors must recognize the fact that this is an institute for learning. Flexibility will be required during certain times of the academic year.

1.3 Use of Permanent Utilities

A. As the building is still under construction, when each permanent utility is operational, it may be used for construction purposes, if acceptable, in writing, by the College. The written request for permission for use of the system from the College shall include, as a minimum, the conditions and reasons for use and provisions for and effect on equipment warranties. In the event that the College accepts the Contractors use of the permanent utility for the balance of the Work, the Contractor shall be fully responsible for it, and shall pay all costs for operation, power, restoration and maintenance of same.

B. If the existing facilities are not adequate for the Contractor, locate temporary facilities where they will serve Project adequately and result in minimum interference with performance of the Work and disruption to the College. Any temporary facilities location is to be reviewed and approved by College's Representative.

1.4 Storage and Staging of Materials

A. The following shall apply to this project

1). The Contractor shall store materials and equipment within areas designated by the College.
2). Security for stored equipment and materials shall be the responsibility of the Contractor.
3. No vehicles will be permitted on the Plaza. Any and all materials and/or equipment brought or stored on the Plaza shall not exceed the maximum weight limit of 150 psf.
4). Access to the construction site for delivery of materials and equipment is limited. Temporary parking for the loading and unloading of the same shall be arranged only with prior approval of the College.
5). The Contractor shall at all times keep access routes, and parking and staging areas clean of debris and other obstructions resulting from the work.

1.5 Temporary Power for Construction Activities

A. Electrical energy, as it exists within the work area, will be available at **no** cost to the Contractor from existing outlets or panels from locations approved by the College. As this site is still under construction, if electrical power is not available in the area of work, it is the Contractor's responsibility to provide necessary power to perform the Work. Typically available power may be used for small power tools (not exceeding ½ HP).

1.6 Temporary Lighting / Heating & Cooling / Water

A. Electrical lighting, as it exists within the work area, is available to the contractor at **no** cost. As this site is still under construction, if electrical lighting is not available in the area of work, it is the Contractor's responsibility to provide necessary temporary equipment to perform the Work at its cost.

1.7 Temporary Sanitary Facilities

A. Toilet, Water, and Drinking Water Facilities: The Contractor shall make arrangements with the College for use of the existing toilet, water, and drinking water facilities. It is the Contractor's responsibility to maintain the facility during the construction and restore to original state upon completion of the project.

1.8 Temporary Parking

A. Contractor is to abide to the following:

1). The Contractor and its employees shall be subject to all the rules and regulations of the College, including parking regulations. The College is regulated by New York State Vehicle and Traffic Laws.
2). The Contractor and its employees shall only park in the designated areas in Lot #W-2. There shall be no parking in other areas of the campus (unless prior written authorization is provided by the College Chief of Police).
3). Parking violations are subject to fines and are the sole responsibility of the Contractor or its employees. Vehicles that are parked illegally may be towed at the expense of the owner/driver.
4). All vehicles are required at all times to register with the College's Public Safety Unit.
5). There is $35.00 fee for parking permits. The fee is per vehicle and permits need to be display whenever the vehicle is parked on campus.

1.9 Temporary Support Facilities

A. Construction Aids: Provide all items, such as lifting devices, all scaffolding, staging, platforms, runways, ladders; and all temporary flooring, as required by the various trades for the proper execution of the Work. Provide such construction aids with proper guys, bracing, guards, railings and other safety devices as required by the governing authorities and OSHA.

B. Elevator and Loading Dock Usage: The Contractor shall make all arrangements with the College's Representative for the use of elevators as required for transporting material and workmen to the work areas and for the disposal of rubbish and waste materials.

1.10 Safety and Protection of Facilities

A. The Contractor shall provide the necessary safeguards to prevent accidents, to avoid all necessary hazards and protect the public, the Faculty and Staff, students, the work, and the property at all times, including Saturdays, Sundays, holidays, and other times when no work is being done. The Contractor shall submit a safety plan which shall be certified by a Certified Safety Professional from the Board of Certified Safety Professionals (www.bcsp.org).

B. The Contractor shall erect, maintain and remove appropriate barriers or other devices, including mechanical ventilation systems, as required by the conditions of the work for the protection of the users of the project area, adjoining areas, the protection of the work being done, or the containment of dust and debris. All such barriers or devices shall be provided in conformance with all applicable codes, laws and regulations, including OSHA and National Fire Prevention Association 241, for safeguarding of structures during construction.

C. Fire safety during construction:

1). The Contractor shall provide all temporary equipment, labor and materials required for compliance with the applicable provisions of Chapter 14, Fire Safety during Construction and Demolition, of the Fire Code of New York State.

2). For areas and spaces under their control, the Contractor shall comply with Chapter 14 of the Fire Code of New York State, titled "Fire Safety during Construction and Demolition". Subject to approval by the College's Consultant and the College, the Contractor shall designate one person as the **fire prevention program superintendent**. This superintendent shall be responsible for the fire prevention program required by Section 1408 of the Fire Code of New York State and implementing the minimum safeguards for construction, alteration, and demolition operations that provide reasonable safety to life and property from fire during the Contractor's operations. Responsibilities also include developing and maintaining pre-fire plans per 1408.2, the training of the Contractor's workforce per 1408.3, maintenance of the fire protection equipment per 1408.4, supervising hot work operations per 1408.5, and implementing temporary impairment to existing fire protection systems per 1408.6 & 1408.7. This superintendent shall also provide periodic written reports at the field meetings and respond to questions raised concerning compliance with Chapter 14 of the Fire Code of New York State.

D. Contractor shall comply with Labor Law Section 220-h; provide workers certified as having successfully completed the OSHA 10-hour construction safety and health course; and comply with applicable NYS DOL rules and regulations for monitoring and reporting compliance.

E. Temporary Fire Protection:

1). If the existing building is to be partially occupied during the course of the project, all existing exits and fire protection systems shall be continuously maintained in the occupied spaces/phases, or other measures must be taken which in the opinion of the College's Consultant and/or College will provide equal safety. Those portions occupied by the College must be available for their use 24hours a day, seven days a week during the contract period unless otherwise scheduled in these documents. Comply with all applicable State and Federal codes and regulations. The cost of all labor, fire watches, variances, materials, installations, maintenance and removal of such temporary fire protection systems or modifications to the existing systems are the responsibility of the Contractor.

F. Fire Watch Requirements:

1). If any of the work of the Contractor;

a) Disables any fire suppression systems, standpipes systems, fire alarm systems, fire detection systems, smoke control systems and/or smoke vents as defined in Chapter 9 of the Fire Code of New York State (FCNYS).
b) Involves welding, cutting, open torches and other hot work as defined in Chapter 26 of the FCNYS and/or involves demolition activities that are hazardous in nature as defined in Chapter 14 of the FCNYS.

Then the Contractor shall provide a fire watch or perform the work during the hours where the building is scheduled by the College to be closed, in accordance with Section 901.7 of the FCNYS, for structures that have campus occupancy.

2). If a fire watch is required, the Contractor shall provide all labor that is required. The Contractor shall:

a) Contact the New York State Department of State Office of Fire Prevention and Control (OFPC)at 41 State Street, Albany, NY 12231-0001, Phone: (518) 474-6746, Fax: (518) 474-3240, e-mail: fire@dos.state.ny.us and obtain its currently amended recommendation for fire watch procedures. Review the OFPC recommendations and notify the College's Consultant and/or College Representative if there are significant discrepancies with the requirements of this section.
b) Review the fire watch procedures with the College's alarm monitoring staff (University Police – 914-251-6900) and the fire department prior to disabling a fire protection system. Submit a plan for the fire watch for approval by the College's Consultant and/or College Representative, and schedule a pre-system shutdown meeting with the College's Consultant and/or College Representative.
c) Employ, instruct and maintain competent fire watch personnel. Provide the sufficient number of dedicated personnel that are required to patrol all portions of the means of egress system in the facility in the period of time required.
d) Notify University Police (UPD) prior to and at the conclusion of the fire watch.
e) Employ competent personnel to fix the fire protection system (see section 1.11 below).

3). Fire Watch Duties: Personnel serving as a fire watch have the following duties:

a) Conduct periodic patrols of the entire facility as specified below.
b) Identify any fire, life or property hazards.
c) Notify the UPD if a fire is discovered by call (914-251-6911), with the exact address and type of emergency.
d) Notify occupants of the facility of the need to evacuate. If sirens or public address function of the alarm system are still functional, use them to assist with evacuation of the building.
e) Have access to at least one means of direct communication with UPD. A cell phone is acceptable.
f) Maintain a written log of fire watch activities.

g) Have knowledge of the location and use of fire protection equipment, such as fire extinguishers. (Note: The fire watch will not perform fire-fighting duties beyond the scope of the ordinary citizen).
h) Perform no other duties that are not directly part of the fire watch duties.

4). Frequency of Inspections: Fire watch personnel should patrol the entire facility patrol every 30 minutes except in the following situations, where patrols shall be every 15 minutes:

a) The facility has people sleeping.

5). Record Keeping: A fire watch log should be maintained at the facility. The log should show the following:

a) Address of the facility.
b) Times that the patrol has completed each tour of the facility.
c) Name of the person(s) conducting the fire watch.
d) Records of communication(s) to the University Police.
e) Record of other information directed by the College's Consultant and/of the College Representative.

1.11 Modifications / Alterations to Campus Existing Fire Alarm Systems

A. The Campus standard for its fire alarm is the Edwards Fire Alarm System. Any contractor working on the Campus fire alarm system must be a licensed fire alarm installer. Any contractor working on adding to or modifying the existing fire alarm system's programming, must be certified to work on an Edwards Fire Alarm System and provide proof of that certification.

B. A Pre-Fire Alarm construction meeting will be required between the Contractor, their fire alarm sub-contractors, and the College's Representative prior to any fire alarm work occurring.

C. Contractor shall coordinate all modifications and/or alternations to the existing building's fire alarm systems with the College's Representative. If the work shall affect the existing fire alarm system in adjoining areas, the contractor must submit, in writing, their plan to protect and maintain the systems in the adjoining spaces, to the College's Representative for the College's review and approval, at least 72 hours in advance.

D. Where demolition and dust may impact existing fire alarm smoke heads, the contractor shall protect these heads prior to beginning any work and follow the College's protocol listed below. If smoke heads are protected during the day, while work is occurring, the Contractor must uncover these heads at the end of each work day before leaving the site. The area protected by covered smoke heads must be continuously monitored while the heads are covered. The fire alarm systems must be operational at all times during construction. In the event that there is a need to shut down the system, the Contractor must notify the College in writing at least 72 hours in advance and provide a Fire Watch for all of the areas affected by the shutdown during the times the systems are non-operational.

E. Where work will impact the existing fire alarm system, the contractor's site supervisor must follow the following protocol:
1) Contractor Supervisor to contact the College's University Police (251-6900) prior to beginning work for the day and let them know where work is occurring and which smoke heads are being covered or device made inoperable.
2) Cover smoke heads and make scheduled devices inoperable. Call University Police once heads are covered.
3) Contractor to perform scheduled work. The area must be continuously monitored while the smoke heads are covered.
4) At the end of the work day, Contractor Supervisor to College's University Police and let them know smoke head covers are being removed. It's strongly recommended that Contractor let's day's dust settle and clean around the devices prior to removing protective covers to avoid unintended activation.

Part 2 – Party Responsibilities

2.1 Information and Services Required of the College

A. Furnished Information: College shall furnish (if available) surveys, existing plans, or other required information describing physical characteristics, legal limitation and utility locations for the site of the Project, and a legal description of the site. These documents are for information purposes only. They are to be field verified by the Contractor for accuracy. The College will not be responsible if actual conditions vary from what is indicated on the documents. Plans will be released to awarded Bidder in PDF electronic format.

B. College's Right to Stop the Work: If Contractor fails to correct Work which is not in accordance with the requirements outlined, or fails to carry out Work in accordance with the Contract Documents, the College, by written order signed personally or by an agent specifically so empowered by the College in writing, may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the College to stop the Work shall not give rise to a duty on the part of the College to exercise this right for the benefit of Contractor or any other person or entity.

C. College's Right to Carry Out the Work: If Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten (10) business-day period after receipt of written notice from College to commence and continue correction of such default or neglect with diligence and promptness, College may, without prejudice to other remedies College may have, correct such deficiencies. *College may offset* from payments then or thereafter due Contractor the cost of correcting such deficiencies, including compensation for Consultant's additional services and expenses made necessary by such default, neglect or failure. If payments then or thereafter due Contractor are not sufficient to cover such amounts, Contractor shall pay the difference to the College.

2.2 Information and Services Required of the Contractor

A. Review of Contract Documents: Contractor shall carefully study and compare the Contract Documents with each other and with the information furnished by the College, and shall at once report to the College Representative errors, inconsistencies or omissions discovered.

B. Review of Field Conditions: Contractor shall, *sufficiently in advance of undertaking the Work*, take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to Contractor with the Contract Documents. Errors, inconsistencies or omissions discovered shall be reported to the College Representative at once. *If Contractor performs any construction activity which involves an error, inconsistency or omission which Contractor knew of or should reasonably have known of, without notice to College, Contractor shall assume responsibility for such performance and shall bear all costs of correction.*

C. Construction Schedule: Contractor, promptly after being awarded the Contract, shall prepare and submit for College Representative, a Contractor's construction schedule for the Work.

D. Supervision:
   1). Contractor shall supervise and direct the Work, using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over *construction means*, methods, techniques, sequences and procedures *including safety programs and procedures*, and for coordinating all portions of the Work under the Contract.
   2). Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Contract. Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.
   3). Contractor shall be responsible for inspection of related portions of Work already performed, *as well as existing conditions,* to determine that such are in proper condition to receive subsequent Work.

E. Contractor shall be responsible to College for acts and omissions of Contractor's employees, Subcontractors and their agents and employees, and other *persons or entities directly or indirectly employed by them* performing portions of the Work under a contract with Contractor

F. Cutting and Patchwork:
   1). Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

2). Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying or load-deflection ratio.
3). 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 (i.e., mechanical systems, plumbing, fire alarm, etc.).
4). 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.
5). Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
6). Dispose of demolished items and materials promptly.
7). Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
8). Existing utilities services to the College must be maintained at all times. If the Contractor is required to affect these services in order to complete the Work, Contractor must obtain written permission from the College prior to this work (also see Special Requirements Section). Any damage or disruption of services shall need to be repaired immediately and at the Contractor's expense.

G. Hot Work Permits:
1) If the work requires any Hot Work (including cutting, welding, Thermit welding, brazing, soldering (except soldering electronics or electrical components with an electric soldering iron or gun), grinding, thermal spraying, thawing pipe, installation of torch-applied roof systems or any other similar situation), the Contractor shall be required to obtain a Hot Work Permit issued by the College. The Contractor shall request this through the College Representative, and be given a copy of the College's "Hot Work Guidelines and Permit Process" and the permit forms to be filled out. The Contractor must request, submit, and be given a permit before any Hot Work begins.

H. Cleaning Up:
1). Contractor shall *at all times* keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work Contractor shall remove from and about Project waste materials, rubbish, Contractor's tools, construction equipment, machinery and surplus materials.
2). If Contractor fails to clean up as provided in the Contract Documents, College may do so and the cost thereof shall be charged to Contractor.
3). If a dispute arises among Contractor, separate contractors and College as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish as described above, College may clean up and allocate the cost among those responsible

I. Access to Work: Contractor shall provide College access to *all portions of* the Work in preparation and progress wherever located.

2.3 Communications Protocol for Contract Administration

A. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, Contractor shall communicate through the College Representative to the College. Communications by and with College's consultants shall be through College Representative. Communications by and with Subcontractors and material suppliers shall be through Contractor.

Part 3 – Construction Administration Management

3.1 Project Meetings

A. Periodic job meetings will be scheduled by the Consultant and the University during the course of construction. The Contractor, and, upon request of the Consultant and the University, its principal subcontractors and manufacturer's representatives, shall attend such meetings and be prepared to furnish answers to questions on progress, workmanship, or any other subject on which the Consultant and the University might reasonably require information.

1) In addition to the requirements of the Agreement, the Contractor shall submit bi-weekly reports to the Consultant summarizing the last two weeks of work and next two weeks of work anticipated, listing the percent of work complete by trade, tabulating manpower utilized / projected, relevant shop drawing and submittals progress, relevant offsite fabrication progress and providing other information which may be reasonably required to understand the progress of the work.

2) In addition to the above referenced meetings, the Contractor shall schedule and manage periodic coordination meetings at the site between it and all its trades, subcontractors, suppliers, manufacturers, etc. to settle the allotment of work per the Agreement and to review progress on submittals and shop drawing, progress on installation of the work, conflicts between work of trades, compliance with the design intent, adherence to the Contractor's schedule, quality control, planning for commissioning and training of campus personnel, and other items which require coordination and sharing of information. Representatives of the Consultant and the University may attend these meetings to observe and make comments. These meetings shall be held a minimum of once per month and more frequently where required to effectively coordinate the construction. The Contractor shall prepare and distribute summary minutes of these meetings within (5) five working days of the meeting, in accordance with the "Document Tracking and Change Control Paragraph" of this section. Distribution of the coordination meeting minutes shall be to all attendees with copies to the University and Consultant whether they are in attendance or not.

3) The personnel representing the Contractor and its principal subcontractors shall have the authority to make decisions directly affecting the work.

4) In addition to the above meetings, meet to review fire safety periodically during the work and, starting approximately (16) sixteen weeks prior to the scheduled date of substantial completion, the Contractor's principals, project manager and those of its significant subcontractors shall attend additional weekly meetings with the Owner and its consultant(s) to review the progress on preparing close out deliverables, including those in Sections Operating Instructions and Manuals, Warranties, and Training of Campus Personnel.

3.2 Requests for Information

A. In the event that the Contractor determines that some portion of the Drawings and Project Manual for the project requires clarification or interpretation by the Consultant, the Contractor shall submit a Request for Information (RFI) in writing to the Consultant. The Contractor shall create an RFI log in a format approved by the Consultant. Submit the RFI log to the consultant prior to each periodic Field Meeting. Update the RFI log to reflect comments received at the Field Meetings. The Contractor shall define the issue that requires clarification or interpretation in clear and concise language as follows:

1) The Contractor shall customize RFI forms and logs for this project and submit them to the Consultant for review and approval prior to submission of any RFIs.

2) Forms should include provisions for the Consultant's response, Contractor acceptance of response or rephrasing of question, and the Consultant's additional response if requested.

3) Forms should include provisions for locating the issue within the building, by room number, name and nearest columns.

4) RFIs shall confirm that reasonable locations for the information required have been reviewed and document those locations by specific references to the Drawings and Project Manual on the RFI.

5) The Contractor shall review the RFI for systemic or global implications, including review of other pending RFIs and work of other phases, so that the final RFI submitted represents a reasonable consolidation of similar requests.

6) The Contractor shall coordinate and review the RFIs originating from its trades, subcontractors, suppliers, manufacturers, etc. for compliance with this process, including polling them and meeting with them onsite to review the issue prior to its submission as an RFI. The Consultant may attend such meetings.

7) Contractor to coordinate response from Consultant with subcontractors.

8) The RFI shall contain a description of what the Contractor believes to be the intent of the design documents, with due regard to the Agreement, along with reasons why the RFI is required.

9) RFIs shall only be submitted on the approved forms.

10) RFIs that do not comply with the above requirements will be returned to the Contractor for revision and resubmission.

B. The Consultant will review all RFIs to determine whether they are RFIs within the meaning of this term as defined above. If the Consultant determines that the document submitted is not an RFI, it will be returned to the Contractor un-reviewed as to content, for resubmission in the proper manner and it will be removed from the RFI log.

C. The Consultant will respond to all RFIs within (10) ten business days of its receipt, unless the Consultant determines that a longer time is required for an adequate, coordinated response. If the longer response time is deemed necessary, the Consultant will notify the Contractor of that necessity and indicate when the response will be completed within (10) ten business days of its original receipt.

D. Based on projects of similar complexity, it is anticipated that there may be up to (15) fifteen RFIs on this project and that multiple responses may be required to adequately answer each RFI.

E. Responses to RFIs shall not change any requirements of the documents.

3.3 Notice of Non-Compliance

A. In the event the Consultant views the work or some portion thereof and finds that it has not been performed in accordance with the requirements of the contract documents, a Notice of Non-Compliance will be issued to the Contractor for action. Payment shall not be made for any portion of the work for which a Non-Compliance Notice has been issued and the work not corrected to the satisfaction of the Consultant.

B. Upon receipt of a Non-Compliance Notice the Contractor shall provide a written response to the Notice within ten (10) working days after receipt of the Notice. The Contractor's response shall detail either:

1) Why they believe that the work was performed in accordance with the contract documents, or,

2) What corrective action they intend to take, at their sole expense, to correct the non-conforming work.

C. Refer to the Agreement for Contractors contention to the decision.

3.4 Warranties

A. Provide warranties for products, equipment, systems and installations required by other technical sections of Contract Documents for duration indicated. Warranties shall be individually listed in the project specific submittal log required by Shop Drawings and Samples.

1) All warranties required by Contract Documents shall commence on date of Substantial Completion shown on Page a-1 of the Agreement.
   a). At no additional cost to the College, for products, equipment, systems and installations completed prior to the date of Substantial Completion, obtain and pay for warranty extensions that cover the additional time between the earlier date of their completion and the date of Substantial Completion.

2) Provide a list of all Contractor provided warranties that are specified in Divisions 1 through 48, inclusive, and list who will inspect the work covered by the warranty (if applicable), when it will be done, who witnessed it and when, results (pass/fail), follow up action, comments and other information requested by the Consultant.
   1. Unless otherwise approved by the College, all inspections must be witnessed and signed off by the Consultant prior to acceptance of Contractor provided warranties that are specified in Divisions 1 through 48, inclusive.
   2. The Consultant will reject a Warranty issued prior to or without the manufacturer's field inspection of the work, if required in Divisions 1 through 48, inclusive.

3) Unless otherwise approved by the Consultant and if required in Divisions 1 through 48, inclusive, the scheduled value of a Contractor provided warranty in the Contract Breakdown required by the Agreement shall be 5% of the amount of the work being warrantied.

4) Furnish and organize original warranties in a separate binder with a durable plastic cover. Organize the binder into separate sections by CSI number based on the table of contents of the project manual. Internally subdivide the binder contents with permanent page dividers, logically organized as described below, with tab titles clearly printed under reinforced laminated plastic tabs. Provide a printed Table of Contents.
   a) Warranties shall be in the form required by the applicable technical sections of Contract Documents. Include procedures to follow and required notifications for warranty claims.
   b) Warranty Certification: Written certification from the warrantor that the warranty is in effect and non-retractable due to any of the specified conditions. Warranties submitted without warranty certification will not be accepted.
   c) Deliver the binder to the Consultant with the written notice of Substantial Completion required by the Agreement.

5). For uncompleted work delayed beyond date of Substantial Completion, provide updated binder submittal within (10) ten days after acceptance, indicating date of acceptance as start of warranty period for any work delayed beyond date of Substantial Completion.

Applications for payment after the date of Substantial Completion may not be approved until the warranty certification and warranty documents are delivered to the Consultant.

End of Special Conditions for Construction

SECTION 024119 - SELECTIVE DEMOLITION AND ALTERATION WORK

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. The Work of this Section includes all labor, materials, equipment and services necessary to complete the selective demolition and alteration work as shown on the drawings and/or specified herein, including but not limited to the following:

1. Alterations, selective demolition and removals as noted on drawings and as required to accommodate new construction.
2. Removal of concrete slabs and walls for new mechanical penetrations
3. Patching and painting of surfaces damaged by selective demolition. All newly painted surfaces shall be inside corner to inside corner to match adjacent finish.
4. Removal of debris.
5. Protection of existing building and spaces to remain, and shoring of the structure as required for structural integrity and personal safety.
6. Temporary coverage passageways.
7. Alterations, selective demolition and removals of exterior facade where noted.
8. Removal of existing roof membrane system to existing structural deck.
9. Removal and replacement of existing acoustic ceiling panel units, including protection of existing ceiling.
10. Building envelope and interior spaces shall be protected at all times. General Contractor shall maintain building envelope watertight at all times. Ambient temperature of 68 degrees F shall maintain at all times within spaces.

1.3 QUALITY ASSURANCE

A. The Contractor shall comply with the requirements of all applicable Federal, State and local safety and health regulations regarding the demolition of structures including ANSI/NFPD 241-Building Construction and Demolition Operations.

B. The Contractor shall be responsible for any damage to any adjacent structures or buildings to remain.

c. Qualifications: Qualifications of Contractor for work of this Section shall not be less than ten (10) years of field experience in work of this nature.

D. Professional Engineering: The Contractor shall retain the services of a Professional Engineer licensed in the State of New York, who shall design and supervise installation of any required shoring.

1.4 RELATED SECTIONS

A. Alteration and removal requirements for mechanical and electrical work Mechanical and Electrical Sections.

B. Alteration and removal requirements for structural work — See Structural Drawings.

1.5 SUBMITTALS

A. Notice of Differing Conditions: Submit a written notification if, during the work of demolition and cutting, conditions are discovered which significantly vary from those shown on the drawings. Do not commence work until approval of Architect.

B. Shop Drawings: Submit the following prior to starting work:

1. Submit for Architect's information shop drawings indicating location and typical construction details for temporary dustproofing and weatherproofing.

2. Submit drawings of temporary structural shoring, bracing, framing or support, for the information of the Architect. Such drawings will be reviewed by the Structural Engineer for the effects of such temporary members on the structural elements to remain. These drawings shall include the reason for such temporary members, the location, the direction and magnitude of design reaction forces on existing structure, and details showing how these reaction forces will be applied to the existing structure.

a. Shop drawings shall be submitted with the Seal of the P.E. engaged by Contractor; P.E. must be licensed in the State of New York.
b. The Architect will receive acknowledgment for concepts shown. Such acknowledgments shall be of the concept only and not of actual capacities or structural design and shall not in any way diminish or limit the Contractor’s responsibility for the quality and performance of the work and for protecting existing structures and facilities.

1.6 SPECIAL PRECAUTION

A. Hazardous materials may be encountered during demolition operations including asbestos; comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.

1. Refer to Sections 028213 and 028214 for further requirements.

1.7 JOB CONDITIONS

A. Condition of Structure

1. The Contractor shall be held to have visited the site, examined the premises, determined for himself the existing conditions, character of equipment and facilities needed for the performance of the work, and all matters which may in any way affect the work before submitting a bid.

a. Information regarding existing construction or conditions is based on available record drawings which may or may not truly reflect existing conditions. Such information is included on the assumption that it may be of interest to the Contractor, but the Architect, Owner and their consultants do not assume responsibility for its accuracy or completeness.

C. Before commencing any alteration or demolition work, the Contractor will deliver on site all materials necessary to complete the work of each phase.

PART 2 PRODUCTS

Refer to Part 3 - Execution, for Product Requirements

PART 3 EXECUTION

3.1 PROTECTION

A. Take full precautions to protect workmen, passersby or any other persons from falling debris and other hazards of demolition operations.

B. Execute demolition work to insure protection of existing portions of building to remain against damages which might occur from falling debris or other cause. Do not interfere with use of adjacent occupied areas. Maintain free, safe passage to and from occupied spaces.

C. Materials Placement: Do not load structure with weight that will endanger, overload or cause excessive deflection of the existing structure, or that will damage finished surfaces adjacent to and/or supported by the existing structure, except portions being removed.

D. Provide the necessary safeguards to prevent accidents, to avoid all necessary hazards and protect the public, the work and property at all times, including Saturdays, Sundays, and holidays.

E. Be responsible for any and all damages which may arise or occur to any party whatsoever by reason of the neglect in providing proper lights, guards, barriers, or any other safeguards to prevent damage to property, life and limb.

F. Make such explorations and probes as are necessary to ascertain any required protective measures before proceeding with demolition and removal. Give particular attention to shoring and bracing requirements so as to prevent any damage to existing construction.

1. Provide interior and exterior shoring, bracing, or support to prevent movement or settlement or collapse of structures to be demolished and adjacent facilities to remain. The Contractor's Professional Engineer shall advise on bracing, shoring, underpinning, or other structural requirements. The Contractor shall bear all responsibility for prevention of movement or other structural fault.

2. The Contractor shall restore, by repair or otherwise, the portions of structure or their contents altered by the Contractor in furtherance of his underpinning and support operations. Restoration shall be completed to the conditions which existed prior to the start of the work. Any damage caused by inadequate support shall also be restored by the Contractor at no cost to the Owner.

G. Provide, erect and maintain catch platforms, lights, barriers, weather protection, warning signs, and other items as required for proper protection of the workmen engaged in demolition and alteration operations, occupants of the building, public and adjacent property. Any damage caused by the Contractor's operations shall be promptly repaired by the Contractor at no cost to the Owner.

H. Provide and maintain temporary protection of the existing structure designated to remain where demolition, removal, and new work are being done, connections made, materials handled, or equipment moved.

I. Take necessary precautions to prevent dust and dirt from rising. Protect unaltered portions of the existing building affected by the operations under this Section by dustproof partitions and other adequate means.

J. Provide adequate fire protection in accordance with local Fire Department requirements.

K. Do not close or obstruct walkways, passageways, or stairways. Do not store or place materials in passageways, stairs, or other means of egress including fire exits. Conduct operations with minimum trañc interference. Provide temporary doors where required for egress during Phased operation.

L. Be responsible for any damage to the existing structure or contents by reason of the insufficiency of protection provided.

M. Erect temporary covered passageways at street level as required by authorities having jurisdiction.

N. Promptly repair damages caused to adjacent spaces by demolition operations at no cost to the Owner.

0. Provide and maintain weather protection at exterior openings so as to fully protect the interior premises against damage from the elements until such openings are closed by new construction.

P. Provide and maintain weather protection where existing roof system is being removed so as to fully protect the interior premises against damage from the elements until such time new roof is in place. Existing roof shall be protected to prevent ponding of water between existing construction and new roofing.

Q. Provide and maintain protection of existing equipment on existing roof including but not limited to exhaust fans, air handling units and other equipment on existing roof.

R. Protect and maintain protection of existing furniture and equipment in interior spaces where work is being executed.

3.2 INSPECTION

A. Verify that areas of demolition work are protected and temporary dustproof partitions have been installed.

B. Verify that construction to be removed is not load bearing or has been properly braced, framed or supported.

c. Inspect existing conditions of the project, including elements subject to damage or to movement during demolition and cutting.

D. After uncovering work, inspect the conditions affecting the installation or performance of the work.

1. Report differing or questionable conditions to the Architect in writing; do not proceed with the work until the Architect has provided further instructions.

3.3 PREPARATION

A. Provide adequate temporary support as necessary to assure the structural value or integrity of the affected portion of the work

B. Provide devices and methods to protect other portions of the project from damage.

c. Pollution Controls

1. Use temporary enclosures and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing regulations pertaining to environmental protection.

2. Clean adjacent structures and improvements of dust, dirt and debris caused by demolition operations. Return adjacent areas to condition existing prior to the start of the work.

3. Provide drainage for temporary water use.

3.4 DEMOLITION AND CUTTING

A. Selectively demolish existing construction in conformance with the drawings and these specifications.

1. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surface to receive installation of work by others and patching of finish surfaces.

2. Do all cutting or removal so as to leave neat, true, plumb and square edges, at edges to remain. Use carborundum or diamond saw equipment for cutting masonry, concrete and stone work, where edges or surfaces are to remain.

3. Do not cut or remove construction which might weaken or impair the structural integrity or strength of the structural framing or support systems which are to remain.

4. Demolish and remove materials as shown on the drawings without damage to the remaining parts of the structure or mechanical/electrical/utility systems.

5. Remove materials so as to not impose excessive loads in supporting walls, floors or framing and so as not to damage remaining undemolished portions of the structure.

6. Where portions of structures are to be removed, remaining portions shall be protected from damage and prepared to fit new construction. Damage to portions of structures to remain shall be repaired.

7. Existing waterproofing systems and flashings shall be carefully exposed and protected to maintain workable conditions of fitting new work with existing construction.

8. Proceed with demolition in a systematic manner.

9. Demolish masonry in small sections.

B. Shoring

1. Design, provide, erect and maintain necessary temporary shoring, bracing, framing, or support where load bearing structural or supporting members are removed or weakened by cuts or openings or are subject to damage from demolition operations, and otherwise as required for safety or to protect finish surfaces from damage.

2. Construction and adequacy of the shoring shall be the entire responsibility of the Contractor. Any damage caused by the inadequacy of the shoring or other support shall be the responsibility of the Contractor to remedy at no additional expense to the Owner.

3. Shoring and bracing shall remain until new framing and/or supports are installed. Coordinate operations fully with other trades.

4. Be ready at any time to promptly provide, add to, or strengthen temporary shoring, bracing, or support for existing work, in case existing construction begins to show signs of structural stress.

3.5 WORKMANSHIP STANDARDS FOR ALTERATION AND REMOVAL WORK

A. Cut, remove, alter, temporarily remove and replace, or relocate existing work as required for performance of the work. Perform such work required with due care, including shoring and bracing.

B. Coordinate patching involving the various trades whether or not specifically mentioned in the respective specification Sections.

C. Materials or items demolished and not designated to become the property of the Owner or to be reinstalled shall become the property of the Contractor and shall be removed from the Owner's property.

D. Execute the work in a careful and orderly manner, with the least possible disturbance to the public and to the occupants of the adjacent buildings.

E. In general, demolish masonry in small sections. Where necessary to prevent collapse of any construction, install temporary shores, struts, or bracing.

F. Where existing equipment and/or fixtures are indicated to be reused, repair such equipment and/or fixtures and refinish to put in perfect working order. Refinish as directed.

G. Cut out embedded anchorage and attachment items as required to properly provide for patching and repair of the respective finishes.

H. Where utilities are removed, relocated or abandoned, cap, valve, plug, or by-pass to make complete and working installation.

I. Restore existing pipe and duct coverings damaged by work under this Contract to original undamaged condition.

J. Immediately restore to service and repair any damage caused by Contractor’s workmen to existing pipe and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems which are not scheduled for discontinuance or abandonment.

K. Upon completion of contract, deliver work complete. Damage that may be caused by Contractor or Contractor's workmen to existing structures designated to remain, grounds, and utilities shall be repaired by Contractor and left in as good condition as existed prior to damaging.

L. Restore finish work of floors, walls, and ceilings remaining in place but damaged or defaced because of demolition or alteration work to condition equal that which existed at beginning of work under this Contract.

M. Where alteration or removals expose damaged or unfinished surfaces or materials, refinish such surfaces or materials, or remove them and provide new or salvaged materials to make continuous surfaces uniform.

N. Perform new work and restore and refinish existing work in conformance with applicable requirements of the specifications, except as follows:

1. Materials for use in repair of existing surfaces, but not otherwise specified, shall conform to the highest standards of the trade involved, and be in accordance with approved industry standards, and shall be as required to match existing surfaces.

2. Workmanship for repair of existing materials shall, unless otherwise specified, be equal to similar workmanship existing in or adjacent to the space where the work is being done.

3. Installation of salvaged items where no similar items exist shall be done in accordance with the highest standards of the trade involved and in accordance with approved shop drawings.

0. Materials or items designated to become the property of the Owner shall be as shown on the drawings. Remove such items with care and store them in a location at the site to be designated by the Owner.

P. The existing building shall not be used as a work shop. Neither shall the furnishings or equipment in any room be used as work benches. Should any damage occur during the progress of the work to any furniture, fixtures, equipment, or appurtenances therein, such damage shall be repaired, replaced or made good by the Contractor without extra cost to the Owner.

Q. Where removing existing floor finish and base, remove all adhesive and leave floors and walls smooth and flush, ready to receive new finish.

R. Finish new and adjacent existing surfaces as specified for new work. Clean existing surfaces of dirt, grease and loose paint before refinishing.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General

1. Remove from the site debris, rubbish and other materials resulting from work of this Section.

2. Burning of removed materials from demolished structures will not be permitted on the site.

B. Removal: Transport materials removed from demolished structures and legally dispose of off site. Pay any and all fees associated with disposal work. Leave the site in an orderly condition to the approval of the Architect.

3.7 CLEANING UP

A. Remove debris as the work progresses. Maintain existing premises in a neat and clean condition.

B. The Contractor will divert recyclable materials, such as steel, aluminum and brick, away from landfill.

END OF SECTION

SECTION 03610
GROUTING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Furnish material, equipment, labor, services required to provide non-shrink grout. Work includes, but is not limited to grouting under steel base plates.

1.02 RELATED SECTIONS

A. Unit Concrete Pavers ..... Section 02515

B. Metal Fabrications ..... Section 03610

1.03 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

A. American Society of Testing and Materials (ASTM) Standards, latest editions.

ASTM C109 Test Method for Compressive Strength of Hydraulic Cement Mortars.

ASTM C191 Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle

ASTM C1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens of Hydraulic-Cement Grout

ASTM C1107 Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink).

B. Army Corp of Engineers

CRD C-621 Specification for Non-Shrink Grout.

1.04 SUBMITTALS

A. Product Data

Submit manufacturer's information on the non-shrink grout, including mixing and installation instructions for each type of application.

B. Quality Control Submittals

1. Qualifications

Provide proof of Manufacturer and Installer qualifications specified under "Quality Assurance".

1.05 QUALITY ASSURANCE

A. Qualifications

1. Manufacturer: Company specializing in the production of grout shall have a minimum of five years experience.

2. Installer: Company specializing in performing the work of this section shall have three years minimum experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Materials shall be delivered in manufacturer's sealed and undamaged packaging. Each package shall contain clear and legible labels that meet requirements of local, state and federal regulations identifying manufacturer's name, product name, quantity of material, and batch number.

B. Protect material from the elements and from other damage at site.

C. Replace and pay for material and work damaged to the satisfaction of Engineer.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Do not apply grout at temperatures below 40°F or higher than 90°F. Follow manufacturer's recommendations for placement temperatures, which is typically at an optimum range of 50°F to 80°F. Provide hot and cold weather procedures at other temperatures as per ACI 305R and ACI 306R respectively.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Grout

1. Sika Corp., Lyndhurst, NJ 07071

2. Euclid Chemical Company, Cleveland, OH 44110

3. Five Star Products, Inc., Fairfield, CT 06824

4. HiltiInc., Tulsa, OK 74146

5. Mapei, Deerfield Beach, FL 33442

6. Kaufman Products Inc. Baltimore, MD 21226

2.02 MATERIALS

A. Grout

1. Grout shall be non-shrink, non-metallic, cement based material meeting ASTM 1107 and CRD C-621 with the following characteristics:

a. Minimum compressive strength of 6000 psi @ 28 days when testing in accordance with ASTM C109 or CRD C-621.

b. Slight positive expansion when tested in accordance with CRD C-621 or ASTM C1090.

2. Products:

a. SikaGrout 212 by Sika Corp.

b. Dry Pack Grout and NS Grout by Euclid Chemical Company

c. "Five Star Grout" by U.S. Grout Corp.

d. Multipurpose Grout by Hilti, Inc.

e. Precision Grout by Hilti, Inc.

f. Planigrout 712 by Mapei

g. SureGrout and Suregrout 106 by Kaufman Products Inc.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine all adjoining work on which this Work is in anyway dependent for proper installation and workmanship. Report to Engineer any condition that prevents the performance of this Work.

B. Repair surfaces to receive grout as approved by the Engineer of Record to ensure that the maximum allowed thickness of material is not exceeded.

3.02 SURFACE PREPARATION

A. Concrete surface shall be free of all loose material.

B. All metal components shall be clean and free of corrosion.

C. Surfaces and metal components shall be free of oil, grease, loose paint, corrosive deposits, dust, laitance and other contaminants.

D. Sleeves and holes shall be clean of water, dust and debris.

3.03 APPLICATION

A. Perform all grouting in accordance with the recommendations of ACI, CSI, and the grout manufacturer's published specifications for site preparation, product mixing, and placing. For grouting in weather below 50°F, contact manufacturer for cold weather instructions.

B. Arrange with the manufacturer of the grout for the services of a qualified field representative to instruct the work crews in the mixing of components, preparation of surfaces, technique of installation, and inspection procedures.

C. Place grout at a no more than "flowable" consistency as required by the application, carefully using the manufacturer's recommended water content for Dry Pack, Plastic or Flowable consistencies.

D. Locations

1. Provide grout 1" thick minimum, 2" thick maximum, unless otherwise specified, under column base plates and beam bearing plates. Work grout under plates to provide full and even bearing. Grouting is to be done prior to placement of any concrete on the structure.

2. Provide grout for grouting fence posts into sleeves. Grout is to be placed at a "plastic" consistency and crowned at the post to shed water away from the post onto the adjoining concrete surface.

3. Provide grout for grouting bars in concrete and for "Dry Packing". Follow manufacturer's procedure for mixing and installation.

4. Provide grout under equipment bases.

5. Provide for grouting in pipes entering precast units.

6. Provide grout wherever else it is indicated on Drawings or Specifications.

D. Follow manufacturer's instructions for curing.

3.04 PROTECTION AND CLEANING

A. Clean all adjacent area of excess material and clean all floors and walls of powder and droppings.

3.05 FIELD QUALITY CONTROL

A. Engineer’s Testing Laboratory will inspect the grouting procedure and take cube specimens to test compressive strength.

B. Engineer will inspect and reject any that are of inadequate strength or contains cracks or other defects. These areas shall be fixed at contractor's expense.

C. Engage the services of the material manufacturer's representative to instruct in the proper mixing and usage of the material to ensure the grout is placed at the correct consistency and manner.

END OF SECTION

LIST OF SUBMITTALS

SUBMITTAL	DATE SUBMITTED	DATE APPROVED
Product Data:	_____	_____
1. Grout		
Qualifications	_____	_____
1. Manufacturer 2. Installer		

* * *

SECTION 05121
STRUCTURAL STEEL

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

A. Furnish and erect all steel beams, angles, and other items shown on Drawings.

B. Provide fire resistive quoting as required.

1.02 RELATED SECTIONS

A. Grouting.....Section 03610
B. Fire Resistive Materials.....Section 07250

1.03 SUSTAINABILITY REQUIREMENTS

Not Used

1.04 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

A. American Society of Testing and Materials (ASTM) standards, latest editions.

B. "Specification for Structural Steel Buildings" - American Institute of Steel Constructors (AISC 360-05).

C. American Welding Society (AWS) standards for procedures and materials.

D. "Code of Standard Practice for Steel Buildings and Bridges" (AISC 303)

E. Steel Structures Painting Council (SSPC) standards.

1.05 DEFINITIONS

Not Used

1.06 SUBMITTALS

A. Product Data

Submit manufacturers' specifications for the following products:

1. Fire resistive coating.

B. Shop Drawings

1. Failure to submit legible shop drawings will be cause for return without review.

2. Provide a set of shop drawings showing all connections, bolting, welding, and size of material. Shop drawing shall show intended method of reinforcing existing members and making connections to existing steel as developed by the detailer based on conditions and actual dimensions. Shop Drawings for MEP equipment dunnage and access platforms shall not be submitted until after approval of the submitted MEP units. Ensure shop drawings submitted for MEP equipment dunnage and access platforms are coordinated and based on unit approved, which may vary substantially from the Basis of Design. The Contractor shall take into account in their schedule the potential time impact in the sequencing of the steel drawings.

3. Do not order steel in advance of approval of shop drawings, except at own risk.

4. Shop drawings shall be prepared under supervision of and bear the seal of a Professional Engineer licensed in the State of New York. Connections not designed on the Drawings shall be done by the detailer's licensed Engineer. Do not submit unchecked shop drawings. After final approval of all shop drawings, submit a final set sealed and signed by the Professional Engineer.

5. Shop drawings will be checked for size of material and strength of connection by the Engineer of Record, which shall not render the Engineer of Record responsible for any errors in construction dimensions, etc. that have been made in preparation of shop drawings. The Contractor shall assume full responsibility for the correctness of dimensions and fit.

6. After shop drawings are 100% complete and approved and all field changes have been made,

submit a set of as-built drawings to the Authority (SUNY Purchase College).

C. Quality Control Submittals

1. Certificates and Affidavits

a. Furnish bolt manufacturer's test reports, covering physical and chemical tests, for each lot of high strength bolts submitted.

b. Furnish steel manufacturer's certificate certifying welders employed on the Work are current with their AWS qualifications (including having their required maintenance forms from their employer) and for work performed in the field are NYC licensed welders as per §28-407.1 of the Administrative Code.

c. Furnish complete listing of ASTM's of materials listed in Part 2 of this Section and certification that materials supplied meet those listed.

d. For mechanical and adhesive anchors installed in concrete, submit ICC certification for use in cracked concrete.

2. Contractor Qualifications

Provide proof of Fabricator, Erector, Adhesive Anchor Installer and Zinc Metallizer qualifications specified under "Quality Assurance".

a. Provide proof of Zinc Metallizer's qualifications specified under "Quality Assurance"; certification of qualifications meeting Military Standard by one of the following:

1) A branch of the U.S. Dept. of Defense (DoD), or

2) A company certified by U.S. Dept. of Defense; submit DoD certification for this company.

3) The Society for Protective Coatings (SSPC).

D. Test Reports

Submit test reports for zinc metallizing and epoxy coating system as specified herein, paragraph titled

"Galvanizing by the Zinc Metallizing Process".

E. Sustainability Submittals

1. Recycled Content

a. Submit documentation of recycled content of structural steel; product data or manufacturer's statement as applicable.

1.07 QUALITY ASSURANCE

A. Qualifications

1. Fabricator: Company specializing in the fabrication of steel products to be used in this Contract shall have a minimum of 3 years experience.

2. Erector: Company specializing in performing the Work of this Section shall have a minimum of three years experience and have done at least three projects with similar quantity of material.

3. Adhesive Anchor Installer: Installer for adhesive anchors installed in a horizontal or upwardly inclined position supporting sustained tension loads shall be certified per ACI Appendix D9.2.2 as per Section BC 1912 of the 2014 NYC Building Code.

B. Regulatory Requirements

1. Building Code: Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations of governmental authorities having jurisdiction, including safety, health, noise, and anti-pollution regulations. Where more severe requirements than those contained in the Building Code are given in this Section, the requirements of this Section shall govern.

2. New York City Board of Standards and Appeals (BSA): Rules for Arc and Gas Welding and Oxygen Cutting and Steel Covering the Specifications for Design, Fabrication, and Inspection of Arc and Gas Welded Steel Structures and Qualification of Welders and Supervisors.

3. Industry Standards: Standards specified in Article 1.04 apply to Work of this Section. Where more severe requirements then those contained in the Standards are given in this Section or the Building Code, requirements of this Section or the Building Code shall govern.

4. Recommendations or suggestions in the codes and references listed in this Article and under "References" shall be deemed to be mandatory unless they are in violation of the Building Code.

C. Certifications

1. Structural steel shall conform to the material acceptance, certification, and inspection requirements of Section BC 1701.

2. Qualify welding processes and welding operators in accordance with AWS B2.1.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the site at such intervals as to insure uninterrupted progress of Work.

B. Deliver anchor bolts and other anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time so as not to delay Work.

C. Store materials to permit easy access for inspection and identification. Store material of the ground and protect from the weather and contamination.

1.09 FIELD MEASUREMENTS

A. Take field measurements as required by Drawings. Where possible, take field measurements of existing conditions prior to fabrication. Verify that field measurements are the same as those shown on Drawings and shop drawings. Report all deviations to the Authority (SUNY Purchase College) in writing.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Stud Shear Connectors

1. Nelson Stud Welding Co.

2. Tru-Weld/Tru-Fit Products Corporation

3. Hilti, Inc.

B. Expansion/Screw/Adhesive Anchors, Fasteners

1. Hilti, Inc.

2. ITW Buildex/Red Head/Ramset

3. Simpson Strong-Tie Anchor System, Columbus, OH

4. Powers Fasteners

2.02 MATERIAL

A. Structural Steel Angles

1. Structural steel shall conform to the provisions of ASTM A36 or ASTM A992, pipe steel to the provisions of ASTM A53, Grade B, and tube steel to the provisions of ASTM A500, Grade B, unless otherwise noted.

2. Structural steel shall contain a minimum of 30% post-consumer content and 15% pre-consumer content.

B. Headed Stud-Type Shear Connectors

1. Shall conform to the provisions of ASTM A108, meeting chemical requirements of ASTM A29, Grade 1010 through 1020, and Article 7.2.6 of AWS D1.1. Welded studs shown on the Drawing are the Basis of Design.

2. Mechanical Studs of equivalent strength to welded studs. Unless shown on the Contract Drawings, the size, number of and location on the beam shall be in accordance with the manufacturer's published data and supported by test data.

a. Mechanical shear connectors shall be Hilti X-HVB Shear Connectors installed with Hilti X-ENP-21 HVB powder-actuated fasteners.

C. Bolts

1. Anchor Bolts: Shall conform to the provisions of ASTM F1554, Grade 36, unless different grade is specified elsewhere. Size and detailing indicated on Drawings.

2. Unfinished Bolts: Shall conform to the provision of ASTM A307.

3. Expansion/Screw/Adhesive Anchors, Fasteners Provide types as indicated on Drawings. The anchor specified shall be considered the basis of design. As a minimum, all anchors exposed to weather or embedded in masonry are to be Type 316 stainless steel. Anchors installed in concrete shall be ICC certified for cracked concrete as per BC 1913.

a. Wedge Expansion and Undercut Anchors/ expansion bolts shall have an ICC-ES Evaluation Service Report (ESR) issued in accordance with ACI 355.2 or ICC-ES AC 193 for use in cracked concrete, and including seismic applicability loading, and pursuant to the Office of Technical Certification and Research (OTCR) Building Bulletin 2014-018. Anchors installed in grouted masonry shall have a report issued in accordance with AC 01.

b. Adhesive anchors shall have an ICC-ES Evaluation Service report (ESR) issued in accordance with ACI 355.4 or ICC-ES AC 308 and for use in cracked concrete, and seismic loading and pursuant to the Office of Technical Certification and Research (OTCR) Building Bulletin 2014-018. Anchors installed in grouted masonry shall have a report issued in accordance with AC 58.

c. Concrete Screw Anchors shall have an ICC-ES Evaluation Service report (ESR) issued in accordance with ICC-ES AC 193 and for use in cracked concrete, and seismic loading and pursuant to the Office of Technical Certification and Research (OTCR) Building Bulletin 2014-019. Anchors installed in grouted masonry shall have a report issued in accordance with AC 106.

D. Hardware

1. Nuts for anchor bolts and unfinished bolts shall conform to the requirements of ASTM A563.

2. Nuts for high-strength bolts shall conform to the provisions of ASTM A194 or ASTM A563.

3. Washers shall conform to the provisions of ASTM F436.

E. Filler Metal for Welding

1. Welding electrode shall conform to E70XX classification of AWS A5.1 for welding of new steel to new steel.

2. Welding electrode shall be compatible with existing steel where connections are made to steel of existing building. Electrode shall be E7018 unless determined otherwise. E7018 are low hydrogen electrodes that must be kept extremely dry.

2.03 SHOP ASSEMBLY - FABRICATION

A. General

1. Do not fabricate until shop drawings have been reviewed.

2. Fabricate and assemble steel in shop to greatest extent possible. Fabricate items and assemblies in accordance with AISC Specifications and the shop drawings. Properly mark members for field assembly.

B. Shop Connections

1. Weld or high-strength bolt shop connections as indicated on Drawings.

2. High-strength bolt connections are friction (slip-critical) connections. Install high-strength bolts in accordance with Specification for Structural Joints using High Strength Bolts (approved by the Research Council on Structural Connections (RCSC) – 2009). Utilize Class A connections. If steel surface of connection area is prepared to SSPC-SP5 surface preparation, Class B may be utilized pending inspection by the Authority's Special Inspection lab that surface meets the required preparation. Pay all costs to the Authority incurred for this inspection.

3. Welding: Comply with "Structural Welding Code" for procedures, appearance, and quality of welds and methods used in correcting welded work.

4. Holes for other Work

a. Provide holes and openings required for securing other Work to steel framing and for passage of other Work through framing members. Coordinate with Drawings of other Work.

b. Cut, drill, flame cut, or punch holes perpendicular to metal surfaces. Method of cutting must not produce a roughness of over 1000 microinches. Surfaces exceeding these limits must be repaired by machine grinding. Reinforce all openings with steel shapes as shown on shop drawings.

2.04 SOURCE QUALITY CONTROL

A. Testing

1. General

a. Structural steel work is subject to all tests required by the Special Inspection requirements of the 2014 NYC Building Code.

b. Cooperate with the Testing Laboratory in making all required tests.

2. Tests: To be performed by the Authority's Testing Laboratory.

a. Shop bolted connections: Tested in accordance with AISC specifications.

b. Shop welding - The laboratory will perform the following functions:

1) Certify welders.

2) Visually inspect all welds, record type and locations of defects, and perform tests if necessary. Check all corrected work.

3) Perform non-destructive tests if necessary or as required by the Special Inspector.

B. Inspection

1. Testing Laboratory

a. The Authority (SUNY Purchase College) will engage a Testing Laboratory or Special Inspection Agency to assist in the inspection of steel fabrication and conduct tests at the mill, shop, or foundry. The laboratory will assist in checking erection tolerances and provide shop and field testing required for all structural steel and metal deck work, including metal deck and studs.

b. The Testing Laboratory will be responsible to and under the supervision of a Special Inspector.

2. Special Inspector

The Authority will assign, under the requirements of Section BC 1704.3, a Special Inspector to

supervise the Work listed above under "Testing Laboratory".

3. Notification: Notify the Authority (SUNY Purchase College) before beginning fabrication of the structural steel and supply laboratory with copies of agreements, approved drawings, approved prints of all shop details, etc., and all necessary information relating thereto. Do not ship material to job site until after inspection and approval by the Testing Laboratory.

4. Discretionary Inspections: No mill, shop, foundry, or field inspection, such as is above provided for, shall be held to prohibit or preclude inspection of such materials during delivery and erection at the building by such other persons as the Authority shall direct.

5. Reports: Shop and field reports, including shipments, will be submitted by the Testing Laboratory to the Authority (SUNY Purchase College) as the work proceeds at the shop or job site. A final report will be submitted by the Testing Laboratory when work is completed at the shop, and again when work is completed in the field. The Special Inspector reserves right to reject material not in compliance with specified requirements at any time.

6. Corrections: Correct deficiencies in work which inspections and tests have indicated to not be in compliance with requirements. Pay for additional tests, at own expense, necessary to reconfirm any non-compliance of original work and as necessary to show compliance of corrected work.

7. Contractor's Responsibility: Inspection and acceptance or failure to inspect shall in no way relieve the Contractor or the mill and shops from their responsibility to furnish satisfactory material strictly in accordance with Drawings and Specifications.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and that erection may proceed. Notify the Authority (SUNY Purchase College) in writing of conditions that adversely affect the Work. Do not proceed with erection until conditions have been corrected. Beginning of installation means the erector accepts existing conditions.

3.02 ERECTION

A. General

1. Erection shall conform to Sections BC 2205.6.3 and BC 3305.2.

2. All work shall be erected plumb, square, and true to lines and levels in strict accordance with the structural requirements of the building.

3. Provide all machinery, apparatus, and staging required for the erection of steel work in a thoroughly safe and efficient manner. Install, maintain and remove, without injury to other Work, such temporary bracing, scaffolding, etc. as may be necessary or required. Care shall be taken that no part of the structure is overloaded during construction.

4. Arrange for deliveries of material to facilitate the rapid and continuous progress of operation, but the site or streets adjacent to same shall not be used for the storage of material unless absolutely necessary and then only with special permission of the Authority (SUNY Purchase College) and other authorities having jurisdiction.

5. Employ a Licensed Professional Engineer and Land Surveyor to ensure accurate erection of the steel.

6. Do not alter or cut structural members without written approval of the Engineer of Record. Flame cutting in field of members to correct fabrication errors is to be avoided and to be done only upon approval of the Engineer of Record based on the method proposed. Roughness cannot exceed 1000 microinches. Repair of surfaces shall be by mechanical grinding.

B. Temporary Shoring and Bracing

Provide temporary shoring and bracing members with connections of sufficient strength to bear erection loads and guy wires to maintain structure plumb and in true alignment until completion of erection. Remove temporary work when permanent members and bracing are in place and final connections are made. Fill erection bolt-holes on exposed to view members with plug welds and grind smooth.

C. Anchor Bolts

1. Furnish to the concrete masons anchor bolts and other connectors required for securing structural steel to cast-in-place concrete work, together with instructions, templates, etc. necessary for setting them. Anchor bolts are to be surveyed and any approved modifications made prior to placement of columns.

2. For post-installed expansion/screw/adhesive anchors, drill holes of depth and size required by the manufacturer for the required loading. Holes shall be cleaned completely using wire brush and compressed air following manufacturer's guidelines. For installation in existing substrates not installed as part of the Work, have bolt manufacturer perform pullout test in each substrate to verify capacity and quality of substrate prior to final approval of anchor to be utilized.

3. Tighten anchor bolts after support members have been positioned and plumbed. Cut off protruding edges of wedges or shims flush with edge of base or bearing plate prior to packing with grout. Tighten expansion bolts/anchors to torque required by manufacturer.

D. Field Assembly

1. Erect structural frames accurately to lines and elevations indicated. Align and adjust members forming a part of a complete frame or structure before permanently fastening.

2. Clean bearing surfaces and other surfaces that will be in permanent contact before assembly.

3. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

4. Level and plumb individual members of structure within specified AISC tolerances.

5. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.

6. Splice members only where indicated and accepted on shop drawings.

E. Connections

1. Field connections between new steel members will typically be bolted unless otherwise indicated on Drawings. Connections made to existing steel shall be welded utilizing E7018 electrode. Follow preheat and interpass temperature requirements given in AWS.

   a. Provide high-strength bolts for bolted connections except where unfinished bolts are indicated on the Drawings. High-strength bolt connections are friction (slip-critical) connections. Install high-strength bolts in accordance with "Specification for Structural Joints using High Strength Bolts."

   b. Provide unfinished bolts where indicated on Drawings. Lock nuts by upsetting bolt end or by similar method when unfinished bolts are not encased in concrete. Tighten all bolts and nuts fully.

   c. For ASTM A307 bolts, hardened washer shall be installed under the turned element. For ASTM F3125, Grade A325,/F1852 bolts, hardened washers shall be installed in accordance with Section 6.2 of "Specification for Structural Joints using High Strength Bolts."

   d. Expansion/screw/adhesive anchors shall be installed in accordance with the manufacturer's installation instructions. Holes shall be cleaned completely using wire brush and compressed air following manufacturer's guidelines. Tighten to the torque values specified by the manufacturer. Attach plates flush with surfaces after the surfaces have been cleaned. Have bolt manufacturer perform pullout test in each substrate to verify capacity and quality of substrate prior to final approval of anchor to be utilized.

2. Holes

   a. The size of bolt holes shall be in accordance with AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings."

   b. Ream holes that must be enlarged to admit bolts. Burning or use of drift pins is not permitted.

F. Field Touch-Up

1. Galvanized Members: After erection, clean and paint all damaged areas to the galvanizing, welds, and areas adjacent to welds with the galvanizing repair paint. For galvanized members to be painted, finish painting is specified in Section 09900 and shall be the final two coats of the epoxy paint system.

3.03 TOLERANCES

A. Erection tolerances shall be in accordance with "Code of Standard Practice for Steel Buildings and Bridges".

3.04 FIELD QUALITY CONTROL

A. The Contractor shall cooperate with the Special Inspector and the Testing Laboratory performing Special Inspection testing by providing adequate notification for when work is performed that will require the inspection and provide all required access and means for the laboratory to perform the inspection and testing.

B. The Special Inspector will:

1. Review erection of structural framework and test field bolting and welding as listed in Part 2 of this Section.

2. Where post-installed anchors are utilized, perform Special inspection on Post-installed anchors as per BC 1704.32. Adhesive anchors installed in concrete in a horizontal or upwardly inclined position supporting sustained tension loads shall be installed under continuous Special Inspection as required by paragraph D9.2.4 of ACI 318-11.

C. The Contractor shall engage an engineer licensed in the state of New York to check tolerances and inspect the erection.

3.05 CLEANING

A. Structural steel or portions of such to receive sprayed fireproofing shall be clean of dust, grease, oils, loose material, and any other matter which would impair the adhesion of the fireproofing material to the steel.

END OF SECTION

LIST OF SUBMITTALS

SUBMITTAL	DATE SUBMITTED	DATE APPROVED
Product Data:	_____	_____
1. Primer paint, repair paint		
2. Stud shear connectors		
3. Expansion/adhesive anchors		
Shop Drawings:	_____	_____
1. Steel shop drawings		
2. Calculations		
Certificates:	_____	_____
1. Steel affidavit		
2. Bolt test reports		
3. Welders qualifications & license		
4. Material listing		
5. ICC Certification for Mechanical/Adhesive Anchors		
Qualifications	_____	_____
1. Fabricator		
2. Erector		
3. Adhesive anchor installer		

* * *

SECTION 061053 - CARPENTRY

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment and services necessary to complete the carpentry work as shown on the drawings and/or specified herein, including but not limited to, the following:

1. Blocking and miscellaneous wood, including plywood sheathing below metal roofing.
2. Rough hardware
3. Installation only of finish hardware.
4. Ramp framing
5. Floor framing

1.3 RELATED SECTIONS

A. Finish hardware - Section 087100.

1.4 QUALITY ASSURANCE

A. Lumber Standard: Comply with PS 20.

B. Plywood Standard: Comply with PS 1 and American Plywood Assoc. (APA).

c. Shop fabricate carpentry work to the extent feasible and where shop fabrication will result in better workmanship than feasible for on-site fabrication.

D. Grade Marks: Identify lumber and plywood by official grade mark.

1. Lumber: Grade stamp to contain symbol of grading agency certified by Board of Review, American Lumber Standards Committee, mill number or name, grade of lumber, species grouping or combination designation, rules under which graded where applicable, and condition of seasoning at time of manufacture.

    a. S-Dry: Maximum nineteen (19) percent moisture content as per ASTM D 2016.

E. Installation of doors, frames and hardware shall conform to the minimum standards of "Installation Guides for Doors and Hardware" of the Door and Hardware Institute.

1.5 SUBMITTALS

A. Pressure Treatment: Include certification by treating plant stating chemicals and process used, net amount of salts retained and conformance with applicable standards.

B. Fire-Retardant Treatment: Include certification by treating plant that treatment material complies with governing ordinances and that treatment will not bleed through finished surfaces.

C. Samples: Submit 12" long samples of trim, jambs an wood plank panels.

1.6 PRODUCT HANDLING

A. Deliver carpentry materials to the site ready to use with each piece of lumber clearly marked as to grade, type and mill, and place in an area protected from the elements.

B. Deliver rough hardware in sealed kegs and/or other containers which shall bear labels as to type and kind.

c. Pile lumber for rough usage, when delivered to the site in stacks to insure drainage and with a minimum clearance of six (6) inches above grade. Cover stacks with tarpaulins or other watertight coverings. Store grounds and similar small sized lumber inside the building as soon as possible after delivery.

D. Do not store seasoned lumber in wet or damp portions of the building.

E. Protect fire retardant treated materials against high humidity and moisture during storage and erection.

F. Remove delivered materials which do not conform to specified grading rules or are otherwise not suitable for installation from the job site and replace with acceptable materials.

G. All items specified in Section 087100 of this specification entitled "Finish Hardware" shall be received, accounted for, stored and applied under this Section.

H. Hardware shall be sorted and stored in space assigned by Contractor and shall be kept at all times under lock and key. The safety and preservation of all items delivered will be the responsibility of the Contractor.

1.7 JOB CONDITIONS

A. Installer must examine the substrates and supporting structure and the conditions under which the carpentry work is to be installed, and notify the Contractor in writing of conditions detrimental to the work. Do not proceed with the installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer and the Architect.

B. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow proper attachment of other work.

PART 2 PRODUCTS

2.1 WOOD MATERIAL

A. General

1. All wood shall be sound, flat, straight, well seasoned, thoroughly dry and free from all defects. Warped or twisted wood shall not be used.

2. For miscellaneous wood blocking, grounds, furring as required, use Utility Grade Coastal Douglas Fir or Southern Pine, free from knots, shakes, rot or other defects, straight, square edges and straight grain, air seasoned with maximum moisture content of nineteen (19) percent. Wood shall be S4S, S-Dry, complying with PS-20.

B. Wood Treatment

1. All interior wood material specified herein shall be fire retardant treated to comply with the AWPA standards (C20 for lumber, C27 for plywood) for pressure impregnation with fire retardant chemical to achieve a flame spread rating of not more than 25 (UL Class "FR-S") when tested in accordance with UL Test 723 or ASTM E 84. The fire retardant chemicals used to treat the lumber must comply with FR-1 of AWPA Standard P17 and be free of halogens, sulfates and ammonium phosphate.

   a. After treatment, kiln dry to a moisture content of fifteen (15) percent; if wood is to be painted or finished, kiln dry to a moisture content of twelve (12) percent. Treatment shall be equal to "Dricon" made by Arch Wood Protection Inc. or approved equal. Provide UL approved identification on treated materials.

2. For exterior blocking, roofing and sheet metal, pressure treat wood with copper azole, Type A (CBA-A); ammoniacal copper quat (ACQ) or similar preservative product that contains no arsenic or chromium. Preservative shall comply with AWPA Standard C-2 for lumber and C-9 for plywood, (.25 lbs./cubic foot of chemical in wood).

   a. After treatment, kiln dry to a maximum moisture content of fifteen (15) percent. Treatment shall be equal to "Wolmanized Natural Select" made by Arch Wood Protection Inc. or approved equal.

3. Treated wood which is cut or otherwise damaged shall be further treated in accordance with the AWPA Standard M-4.

2.2 HARDWARE

A. Rough Hardware for Treated Woods and Exterior Use: Hot-dipped galvanized or Type 304 stainless steel.

B. Nails: Common steel wire, untreated for interior work as per ASTM F 1667.

c. Bolts: Standard mild steel, square head machine bolts with square nuts and malleable iron or steel plate washers or carriage bolts with square nuts and cut washers conforming to the following:

1. Bolts: ASTM A 307, Grade A.

2. Nuts: ASTM A 563.

3. Lag Screws and Bolts: ASME B 18.2.1.

D. 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.

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2; use stainless steel for treated woods and exterior use.

E. Wood Screws: ASME B 18.6.1.

F. Concrete and Masonry Anchors: Standard expansion-shield self-drilling type concrete anchors where so shown or noted on the drawings, or where approved by the Architect.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where carpentry is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION OF FINISH HARDWARE

A. All finishing hardware specified in Section 087100 of this specification entitled "Finish Hardware" shall be received, accounted for, stored and applied under this Section.

B. Hardware shall be sorted and stored in space assigned by Contractor and shall be kept at all times under lock and key. The safety and preservation of all items delivered will be the responsibility of the Contractor.

c. Hardware shall be carefully fitted and securely attached, in accordance with these specifications and the instructions of the various manufacturers.

D. Unless otherwise noted, mount hardware units at heights established in Section 081113.

E. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, install each item completely and then remove and store in a secure place during the finish application. After completion of the finishes, re-install each item. Do not install surface-mounted items until finishes have been completed on the substrate.

F. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

G. Drill and countersink units which are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

H. Cut and fit threshold and floor covers to profile of door frames, with mitered corners and hair-line joints. Join units with concealed welds or concealed mechanical joints. Cut smooth openings for spindles, bolts and similar items, if any.

I. All keys used shall be construction keys which are to be tagged with fiber discs as approved, clearly labeled with identifying inscriptions and then neatly arranged in a temporary cabinet. All construction keys shall be returned to the Owner.

J. Adjusting and Cleaning

1. Adjust and check each operating item of hardware and each door, to ensure proper operation and function of every unit. Lubricate moving parts with type lubrication recommended by manufacturer (graphite type if no other recommended). Replace units which cannot be adjusted and lubricated to operate freely and smoothly as intended for the application made.

2. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make a final check and adjustment of all hardware items in such space or area. Clean and re-lubricate operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.3 BLOCKING AND MISCELLANEOUS WOOD

A. General

1. Erect rough carpentry true to line, levels and dimensions required; squared, aligned, plumbed, and securely fastened in place.

2. Shim where required to true up furring, blocking and the like. Use wood or metal shims only.

3. Do all cutting, fitting, drilling and tapping of other work as required to secure work in place and to perform the work included herein. Do all the cutting and fitting of carpentry work, for the work of other trades as required.

B. Blocking and Miscellaneous Wood

1. Furnish and install all wood grounds, furring, blocking, curbs, bucks, nailers, etc., that may be necessary and required in connection with the carpentry and with the work described for any other trades and including required carpentry for electrical fixtures. All blocking and nailers shall be continuous wherever required, whether or not so indicated.

2. Blocking shall be as required for the proper installation of the finished work and for items in mechanical sections as required. Blocking, edgings, stops, nailing strips, etc., shall be continuous, unless distinctly noted otherwise. Provide blocking as required to install all equipment. Provide blocking and nailers where shown or required to fasten interior sheet metal work.

3. Fastening for wood grounds, furring and blocking shall be of metal and of type and spacing as best suited to conditions. Hardened steel nails, expansion screws, toggle bolts, self-clinching nails, metal plugs, inserts or similar fastenings shall be used, of suitable type and size to draw the members into place and securely hold same.

4. All nailing strips and blocking shall be carried out in accordance with the printed installation instructions, and/or recommendations of the accepted manufacturer of the roofing materials, and in coordination and cooperation with the sheet metal work trades.

5. All blocking and nailing strips shall be firmly secured in place using counter bored bolt and nut fastenings, or secured by any other proposed flush surfaced fastenings.

6. Wood nailing strips or blocking required to be embedded in concrete work shall be furnished in time due for placing, prior to start of concrete operations. Locations and spacings of nailing strips or blocking shall be performed in coordination with the concrete trades, as required for respective installations.

C. Plywood Sheathing Below Metal Roof

1. Install with long dimension cross supports, using panels continuous over 2 or more spans with end joints between panels staggered and located over center of supports.

   a. Screw 6" o.c. along panel edges and ends and 12" o.c. at intermediate supports using stainless steel sheet metal screws that penetrate through flanges of C joists.
   b. Provide support at unsupported long edges with "Plyclips" or wood blocking.

2. Allow 1/8" open space between end joints and 1/4" open space between edge joints for expansion and contraction of panels.

D. Wood Trim and Jambs

1. Wood trim construction shall conform to AWI "Premium" grade standards.

2. Install with minimum number of joints possible, using full-length pieces for each run. Stagger joints in adjacent and related members. Cope at returns, miter corner.

3. Joints of all trim and/o moldings shall be set tight, miter exterior angles and cope interior angles. Joints, except end joints less than twelve (12) feet apart, will not be permitted in straight runs of trim and/or molding and rails.

4. Secure all trim and/or moldings with glue and blind nail with finishing nails. Set exposed nail heads in finished work and putty. Sand all work to remove any tool marks and irregularities.

5. Wood shall receive paint finish as specified in Section 099113 — Painting.

E. Wood Wall Planks

1. Construct T & G wall planks of sizes and thickness to match existing . Bind nail to substrate through tongue of plank, spacing nails 8" o.c.

2. Finish of planks to match existing.

3.4 ROUGH HARDWARE

A. Securely fasten rough carpentry together. Nail, spike, lag screw or bolt as required by conditions encountered in the field and the Contract Documents.

B. Provide rough or framing hardware, such as nails, screws, bolts, anchors, hangers, clips, inserts, miscellaneous fastenings, and similar items of the best quality and of the proper size and kind to adequately secure the work together and in place, in a rigid and substantial manner.

C. Secure rough carpentry to masonry with countersunk bolts in expansion sleeves or other acceptable manner, with fastenings not more than sixteen (16) inches apart. Secure woodwork to hollow masonry with toggle bolts spaced not more than sixteen (16) inches apart.

D. Countersink bolts in nailers and other rough woodwork and include washers and nuts. Cut bolts off flush with surfaces and peen as may be required to receive finished work.

3.5 CLEANING UP

A. General: Keep the premises in a neat, safe and orderly condition at all times during execution of this portion of the work, free from accumulation of sawdust, cut-ends and debris.

B. Sweeping

1. At the end of each working day, or more often if necessary, thoroughly sweep all surfaces where refuse from this portion of the work has settled.

2. Remove the refuse to the area of the job site set aside for its storage.

3. Upon completion of this portion of the work, thoroughly broom clean all surfaces.

END OF SECTION

SECTION 07250
SPRAYED FIRE-RESISTIVE MATERIALS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Provide material, labor, equipment, services to properly install sprayed fire-resistive material (sprayed fireproofing) on steel framing members and deck assemblies at a thickness that will meet the required fire-resistance rating of the 2014 NYS Building Code.

B. Provide cementitious type sprayed fireproofing only. The use of sprayed fiber, such as sprayed mineral wool, is not permitted.

C. Apply manufacturer's recommended latex sealer over all regular weight fireproofing.

1.02 RELATED SECTIONS AND WORK

A. Structural Steel.....Section 05120

1.03 SUSTAINABILITY REQUIREMENTS

Not Used

1.04 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

A. **ASTM International (ASTM),** latest editions:

E84 Standard Test Method for Surface Burning Characteristics of Building Materials.

E119 Standard Methods of Fire Tests of Building Construction and Materials.

E605 Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material Applied to Structural Members.

E736 Standard Test Methods for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members.

E759 Standard Test Methods for the Effect of Deflection on Sprayed Fire-Resistive Materials Applied to Structural Members.

E760 Standard Test Methods for the Effect of Impact on Bonding of Sprayed Fire-Resistive Materials Applied to Structural Members.

E761 Standard Test Methods for the Compressive Strength of Sprayed Fire-Resistive Materials Applied to Structural Members.

E859 Standard Test Method for Air Erosion of Sprayed Fire-Resistive Materials Applied to Structural Members.

E937 Standard Test Method for Corrosion of Steel by Sprayed Fire-Resistive Materials Applied to Structural Members.

G21 Standard Test Method to Evaluate Resistance of Synthetic Polymer Materials to Fungi.

B. Underwriters Laboratories, Inc. (UL) Fire Resistance Directory, latest edition.

1.05 DESIGN REQUIREMENTS

A. Thickness of the sprayed fireproofing shall be such as to provide required fire rating in accordance with NYC Building Code and Drawings, but in no case less than .375". Thicknesses shall be based on unrestrained assemblies. Ratings are shown on Drawings for members and assemblies.

B. Fire-resistance rating shall be:

a. Columns Supporting More Than One Floor.. ? hours
b. Columns Supporting Only One Floor..... ? hours
c. Bracing members.....Match

		Adjacent
d.	Beams connected to columns (members that are part structural frame)	? hours
e.	Beams Supporting more than One Floor...	? hours
f.	Trusses (other than roof framing).....	? hours
g.	Structural Members Supporting a Fire Rated Wall or Partition.....	? hours
h.	Floor Construction (Including Beams - those members not part of the structural frame.....	? hours
i.	Roof Construction (Including Beams - those members not part of the structural frame.....	? hours)
j.	Roof Trusses.....	? hours
k.	Floor assembly and columns that are part of a 3-hour enclosure.....	3 hours

1.06 SUBMITTALS

A. Product Data

Submit manufacturer's product information for each type of material including application instructions and specifications.

B. Quality Control Submittals

1. Design Data

a. For each type of material, submit thickness of material required to give the proper fire rating for each type of assembly or individual member (such as inner angle of lintel assemblages, bracing members, columns, etc.) as prepared by the manufacturer.

b. For assemblies having limiting ratios such as W/D, submit table from the manufacturer listing the member, W/D ratio, and the thickness of material required to give the required fire rating. Ratings shall be based on unrestrained assemblies. Provide manufacturer with complete set of Drawings to enable correct determination of required thickness for all members and assemblies. Indicate areas that require bonding adhesive for the given assemblies.

c. From list prepared by manufacturer, provide mark-up of framing plans indicating thickness and type of material for each member.

2. Certificates

a. Furnish manufacturer's certification that materials meet or exceed specification requirements for each of the performance tests specified in Part 2.

b. Furnish applicator's certification that material has been completed as specified to meet fire resistance ratings, thickness requirements, and application requirements.

c. Furnish UL, BSA, MEA, or OTCR approval of material.

d. Furnish certificate stating each material is 100% asbestos free.

3. Contractor Qualifications

Provide proof of Manufacturer and Applicator qualifications specified under “Quality Assurance”.

C. Guarantee

1. Contractor and installer's installation guarantee.

D. Low Emitting Materials Compliance Submittals.

1. Provide documentation for each sealer to be used on site, indicating that the sealers comply with low V.O.C. requirements as stated in Specification Section G01600.

1.07 QUALITY ASSURANCE

A. Qualifications

1. Manufacturer: Company specializing in the manufacture of sprayed fire-resistive materials to be used in this Contract shall have a minimum of ten years experience.

2. Applicator: Company specializing in the application of sprayed fireproofing materials shall have a minimum of three years experience and shall have worked on at least two projects with similar quantities of materials used. Applicator shall be acceptable to the sprayed fireproofing material manufacturer.

B. Regulatory Requirements

1. Building Code: Material and application shall meet the requirements for fire resistance ratings for areas to receive the sprayed fireproofing materials in accordance with the NYC Building Code.

2. Material must have UL or NYC BSA, MEA or OTCR approval for each fire-tested assembly utilized.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original, unopened packages bearing name of manufacturer, product identification, and the proper UL labels for fire hazard and fire-resistance classification.

B. Reject damaged packages found unsuitable for use and remove from job site.

C. Store materials off ground, under cover, and away from damp surfaces.

D. Keep materials dry at all times. Wet material shall be discarded.

E. Rotate stock material and use prior to expiration date.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Maintain air and substrate temperature at a minimum temperature of 40°F for 24 hours before, during, and for 24 hours after application of the sprayed fireproofing. Contractor shall provide enclosures with heat to maintain temperatures. If the manufacturer's accelerator is used for regular density material with proper application equipment, these may be adjusted to their written recommendations.

1.09 GUARANTEE

A. Submit a guarantee, executed by the Contractor and co-signed by the installer, agreeing to repair/replace fireproofing work performed under this Contract which has cracked, flaked, dusted excessively, peeled, or has fallen from the substrate due to defective workmanship for a period of two (2) years from the date of acceptance of the building.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer of the fireproofing material is required to have the material for the required fire ratings of all assemblies and individual members used on this project listed and labeled by UL, or have MEA, BSA, or OTCR approval.

1. W.R. Grace & Co. 62 Whittemore Avenue, Cambridge, Mass. 02140.

2. Isolatek International, Furnace St, Stanhope, NJ 07874

2.02 MATERIALS

A. Regular Density Sprayed Fire-resistive Material

1. Material

a. Material shall be of the cementitious type with a density of at least 15 pcf (regular density). The use of sprayed fiber (such as sprayed mineral wool) is not permitted. Manufacturer's accelerator may be added if applied with manufacturer's recommended equipment during the sprayed fire-resistive

material application and accepted by the manufacturer.

b. Products

1) Monokote Type MK-6 by W.R. Grace.

2) Cafco 300 by Isolatek International.

2. Material shall comply with the following performance test criteria, which shall be tested and reported by UL or approved lab in accordance with the procedures of ASTM E119:

a. Density: Dry density of material shall be a minimum of 15 lb/ft³ or as listed in the UL approval, whichever is greater. No reduction in average thickness is permitted when the density given in the approval is less than 15 lb/ft³ and provides the required fire resistance.

b. Deflection: Material shall not crack or delaminate from the surface to which it is applied when tested in accordance with ASTM E759.

c. Bond Impact: Material subject to impact tests in accordance with ASTM E760 shall not crack or delaminate from the surface to which it is applied.

d. Bond Strength: Fireproofing, when tested in accordance with ASTM E736, shall have a minimum average bond strength of 200 psf and a minimum individual bond strength of 150 psf.

e. Air Erosion: Maximum allowable weight loss of the fireproofing material within a 24 hour period shall be 0.005 gm/ft² when tested in accordance with ASTM E859.

f. Compressive Strength: The fireproofing shall not deform more than 10% when subjected to compressive forces of 1000 psf when tested in accordance with ASTM E761.

g. Corrosion Resistance: Steel with applied fireproofing shall be tested in accordance with ASTM E937 and shall not promote corrosion of steel.

h. Surface Burning Characteristics: Material shall exhibit the following surface burning characteristics when tested in accordance with ASTM E84:

1) Flame Spread.....0
2) Smoke Development.....0

3. Material shall not contain Asbestos of any form.

4. Material shall be tested in accordance with ASTM Standard G21 and shall show resistance to mold growth when inoculated with aspergillus niger and mixed spore cultures (Tappi T487-M54 and ASTM G21). Mold inhibitor shall be added by the manufacturer.

5. Regular density sprayed fire resistive material shall be manufactured with a percentage of recycled materials. The sum of recycled pre-consumer and 1/2 post-consumer recycled content materials shall constitute a minimum of 5%.

B. Medium Density Sprayed Fire-resistive Material

1. Material

a. Material shall be of the cementitious type (Portland cement based) with a density of at least 20 pcf (medium density). The use of sprayed fiber (such as sprayed mineral wool) is not permitted.

b. Products

1) Monokote Type Z-106 by W.R. Grace.

2) Cafco 400 by Isolatek International

3. Material shall comply with the following performance test criteria, which shall be tested and reported by UL or approved lab in accordance with the procedures of ASTM E119:

a. Density: Dry density of material shall a minimum of 20 lb/ft³ or as listed in the **UL** approval, whichever is greater. No reduction in average thickness is permitted when the density given in the approval is less than 20 lb/ft³ and provides the required fire resistance.

b. Deflection: Material shall not crack or delaminate from the surface to which it is applied when tested in accordance with ASTM E759.

c. Bond Impact: Material subject to impact tests in accordance with ASTM E760 shall not crack or delaminate from the surface to which it is applied.

d. Bond Strength: Fireproofing, when tested in accordance with ASTM E736, shall have a minimum average bond strength of 1000 psf and a minimum individual bond strength of 750 psf.

e. Air Erosion: Maximum allowable weight loss of the fireproofing material within a 24 hour period shall be 0.005 gm/ft² when tested in accordance with ASTM E859.

f. Compressive Strength: The fireproofing shall not deform more than 10% when subjected to compressive forces of 10000 psf when tested in accordance with ASTM E761.

g. Corrosion Resistance: Steel with applied fireproofing shall be tested in accordance with ASTM E937 and shall not promote corrosion of steel.

h. Surface Burning Characteristics: Material shall exhibit the following surface burning characteristics when tested in accordance with ASTM E84.

1) Flame Spread.....0
2) Smoke Development.....0

3. Material shall not contain Asbestos of any form.

4. Material shall be tested in accordance with ASTM G21 and shall show resistance to mold growth when inoculated with aspergillus niger and mixed spore cultures (Tappi T487-M54 and ASTM G21). Mold inhibitor shall be added by the manufacturer.

5. Medium density sprayed fire resistive material shall be manufactured with a percentage of recycled materials. The sum of recycled pre-consumer and 1/2 post-consumer recycled content materials shall constitute a minimum of 3%.

C. High Density Sprayed Fire-resistive Material

1. Material

a. Material shall be of the cementitious type (Portland cement based) with a density of at least 40 pcf (high density). The use of sprayed fiber (such as sprayed mineral wool) is not permitted.

b. Products

1) Monokote Type Z-146 by W.R. Grace.

2) Fendolite MII by Isolatek International

3. Material shall comply with the following performance test criteria, which shall be tested and reported by UL or approved lab in accordance with the procedures of ASTM E119:

a. Density: Dry density of material shall a minimum of 40 lb/ft³ or as listed in the UL approval, whichever is greater. No reduction in average thickness is permitted when the density given in the approval is less than 40 lb/ft³ and provides the required fire resistance.

b. Deflection: Material shall not crack or delaminate from the surface to which it is applied when tested in accordance with ASTM E759.

c. Bond Impact: Material subject to impact tests in accordance with ASTM E760 shall not crack

or delaminate from the surface to which it is applied.

d. Bond Strength: Fireproofing, when tested in accordance with ASTM E736, shall have a minimum average bond strength of 7000 psf and a minimum individual bond strength of 6000 psf.

e. Air Erosion: Maximum allowable weight loss of the fireproofing material within a 24 hour period shall be 0.000 gm/ft² when tested in accordance with ASTM E859.

f. Compressive Strength: The fireproofing shall not deform more than 10% when subjected to compressive forces of 70000 psf when tested in accordance with ASTM E761.

g. Corrosion Resistance: Steel with applied fireproofing shall be tested in accordance with ASTM E937 and shall not promote corrosion of steel.

h. Surface Burning Characteristics: Material shall exhibit the following surface burning characteristics when tested in accordance with ASTM E84.

1) Flame Spread.....0
2) Smoke Development.....0

3. Material shall not contain Asbestos of any form.

4. Material shall be tested in accordance with ASTM G21 and shall show resistance to mold growth when inoculated with aspergillus niger and mixed spore cultures (Tappi T487-M54 and ASTM G21). Mold inhibitor shall be added by the manufacturer.

5. High density sprayed fire resistive material shall be manufactured with a percentage of recycled materials. The sum of recycled pre-consumer and 1/2 post-consumer recycled content materials shall constitute a minimum of 1%.

D. Sealer

1. Material

Sealer is to be a water-based latex material compatible with the sprayed fire-resistive material, providing a firmer surface for regular-density fireproofing material. Sealer is to be either factory tinted or tinted in field.

2. Product

a. Firebond Concentrate by WR Grace, with green tint added in field

b. Bond Seal with green tint added in field, or Bond-Seal Type X by Cafco

3. Sealers shall comply with requirements of Section G01600 for V.O.C. requirements.

E. Water

Shall be clean potable water free of injurious foreign matter conforming to the requirements of Section BC 1903.4 of the 2014 NYC Building Code.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Surfaces to receive sprayed fireproofing shall be free of oil, grease, dirt, paints/primers, loose materials, and other matter that may impair proper adhesion of the fireproofing material to the substrate. Do not begin application of fireproofing until the substrate is acceptable to receive the fireproofing material. Confirm that the substrate temperature is acceptable. Notify EOR and Contractor in writing of any conditions that will prevent the proper completion of the Work. Beginning of installation means applicator accepts existing substrate.

3.02 PREPARATION

A. Protection

1. Provide ventilation in area to receive sprayed fireproofing, introducing fresh air and exhausting

air continuously during, and 24 hours after, application to promote the evaporation of water and optimum drying of applied material. Material must be substantially dry within 30 days of application.

2. Provide temporary enclosures to contain overspray.

3. Protect adjacent surfaces and equipment from damage by overspray, fall-out, and dusting-off of sprayed fireproofing materials. Protect concrete and masonry surfaces exposed to view from overspray by using masks, drop cloths, or other satisfactory coverings.

4. Provide fire extinguisher and post caution signs warning against smoking and open flame when working with flammable materials.

5. Prevent entry by non-fireproofing personnel into spraying and mixing areas or other areas exposed to the wet material. Post signs such as "Slippery When Wet".

B. Surface Preparation

1. After acceptance of surfaces, maintain substrate clean of dirt, dust, grease, oil, loose material, frost, or other matter that would affect bond of sprayed fireproofing.

2. Clips, hangers, supports, sleeves, and other items required to penetrate the sprayed fireproofing shall be in place before installing fireproofing.

3. Ducts, piping, equipment, or other items that would interfere with application of fireproofing shall not be positioned until sprayed fireproofing work is completed.

4. Prior to application of fireproofing to the underside of metal deck, concrete work above shall be complete.

3.03 APPLICATION

A. Location of Each Type of Fireproofing Material

1. High-density material:

a. Perimeter steel (those assemblies/members with entire unit or portions thereof exposed to the cavity)

b. Exterior Applications (exposed to the elements).

2. Medium-density Material:

a. All assemblies/members in pipe and duct space, mechanical rooms

b. All assemblies/members in other spaces where assemblies/members are exposed (not covered by partitions, hung ceilings, etc.)

3. Regular-density material: All other assemblies/members to be sprayed. Apply latex sealer to all regular density material. Sealer is to be mixed as per manufacturer's recommendations and clear sealer tinted in the field. Sealer is to be applied after fireproofing has cured a minimum of 28 days and moisture content of the fireproofing is 6% or below.

B. Conform to the material manufacturer's application instructions for equipment and application procedure.

C. Patch and repair sprayed fireproofing surfaces damaged by other trades. Payment for such is the responsibility of the trades responsible for such damage.

D. Correct unacceptable work as determined by the Special Inspector and the EOR and pay for further testing required to prove acceptability of installation.

E. Patch areas from which testing samples have been removed to satisfy fire-rating testing requirements.

3.04 FIELD QUALITY CONTROL

A. Tests

1. The testing laboratory (approved by the SUNY Purchase College PM) will verify physical requirements and perform visual inspections as required by Section BC 1704.

2. Inspections and tests to be done by the testing laboratory as work progresses are as follows.

   a. Visual inspection of substrate prior to application of fireproofing to verify surface preparation in accordance with Section BC 1704.11.2. Visual inspection of material installed to check if material is properly applied or is actually overspray.

   b. Thickness

      1) Thickness of sprayed fireproofing will be tested in accordance with ASTM E605 as per Section BC 1704.11.4.1.

      2) Thickness of sprayed fireproofing applied to floor and roof assemblies will be by taking the average of not less than four measurements for each 1,000 square feet, or portion thereof, of sprayed area in each story (for each hourly rating and material) in accordance with Section BC 1704.11.4.2. Test locations will be selected at random.

      3) Thickness of sprayed fireproofing applied to structural framing members will be performed on not less than 25% of the structural members in each story in accordance with Section BC 1704.11.4.3. Test locations will be selected at random.

   c. Density

      1) Density of sprayed fireproofing will be tested in accordance with ASTM E605 as per Section BC 1704.11.5.

      2) Test samples for determining density shall be selected as follows per Section BC 1704.11.5:

         a) From floor, roof and wall assembly: at least one sample for every 2,500

sq. ft. or portion thereof of sprayed area in each story

b) From beams, Girders trusses and columns: at least one sample for each type of structural member for each 2,500 sq. ft. or portion thereof in each story.

d. Bond Strength

1) Bond strength of sprayed fireproofing will be tested in accordance with ASTM E736 as per Section BC 1704.11.6.

2) Bond strength of sprayed fireproofing applied to floor, wall and roof assemblies will be by taking the average of not less than one sample for each 2,500 square feet, or portion thereof, of sprayed area in each story (for each hourly rating and material) in accordance with Section BC 1704.11.6.1. Test locations will be selected at random.

3) Bond strength of sprayed fireproofing applied to structural members will be performed on not less than one sample for each type of structural member (for each hourly rating and material) for each 2,500 SF, or portion thereof of floor area, in each story in accordance with Section BC 1704.11.6.2 of. Test locations will be selected at random.

4) Bond strength is to consist of a minimum of two tests done at each location, with one being the top of the bottom flange. For steel deck locations, bond strength shall consist of a minimum of two tests done at each location, one being at the top of the flute and one being at the bottom of the flute.

5) For steel that is painted or encapsulated, bond tests to qualify the coating or encapsulant is to be performed in accordance with Section BC 1704.11.6.3

e. Visual inspection of completed work, including patches to cracking and spalling.

B. Inspection

1. Testing Laboratory

a. The PM will engage an approved Testing Laboratory or Special Inspection Agency to inspect and perform the above tests.

b. The Testing Laboratory will be responsible to and under the supervision of Special Inspector.

2. Special Inspector

The PM will assign, under the requirements of Section BC 1704.11, a Special Inspector to supervise the testing of the sprayed fireproofing. The Special Inspector will ensure all required testing is done and that application and substrate temperatures are per the specifications and manufacturer's instructions, which ever is more stringent.

3. Test Results: Results of above tests will be made available to all parties on a regular basis.

4. When test results indicate fireproofing does not comply with the Contract requirements, additional random testing will be done within the testing area to determine the extent of noncompliance. This additional testing shall be paid for by the Contractor.

C. Nonconforming Fireproofing

1. When test results indicate fireproofing does not comply with the required density and/or bond strength, remove and replace fireproofing at no cost to the SUNY Purchase College.

2. If fireproofing is less than the required thickness, place additional material in accordance with the manufacturer's recommendations.

3. Areas of repair or replacement will be retested for compliance with the Specifications.

3.05 CLEANING

A. After completion of fireproofing work clean other surfaces not to be sprayed of any applied fireproofing material.

3.06 PROTECTION

A. Protect applied fireproofing until permanent covering is installed or, where exposed, until final acceptance.

END OF SECTION

LIST OF SUBMITTALS

SUBMITTAL	DATE SUBMITTED	DATE APPROVED
Product Data:		
1. Regular density fireproofing 2. Medium density fireproofing 3. High Density fireproofing 4. Sealer		
Design Data:		
1. Table of thicknesses 2. Framing plans with thick-ness and type of material indicated for each member		
Certificates:		
1. Material certification 2. Applicator's certification 3. UL, BSA, MEA or OTCR approval of assembly 4. Asbestos-free certification		
Qualifications		
1. Manufacturer 2. Applicator		
Guarantee:		
1. Fireproofing		
Low Emitting Materials:		
1. Documentation of VOC content for each sealer used inside the building to show compliance with Section G01600.		

SECTION 075216 - MODIFIED BITUMEN ROOFING

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the modified bitumen roofing as shown on the drawings and/or specified herein, including, but not limited to, the following:

1. Roof Patching at new equipment location
2. SBS modified bitumen roof membrane.
3. Roof insulation.
4. SBS modified flashing.
5. Accessories.

1.3 RELATED SECTIONS

A. Selective demolition and alterations, including temporary roofing — Section 024119.

B. Wood blocking - Section 061053.

c. Flashing and sheet metal -Section 076200.

D. Roof accessories - Section 077200.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Obtain primary roofing products, including roofing sheets (felts), bitumen, composition flashings, and vapor barrier from a single manufacturer. Provide secondary materials as recommended by manufacturer of primary materials.

B. Installer Qualifications: A firm with not less than ten (10) years of successful experience in installation of roofing systems similar to those required for this project and which is acceptable to or licensed by manufacturer of primary roofing materials.

1. Obtain written certification from manufacturer of roofing stating that installer is an approved applicator of roofing system.

c. Pre-Roofing Conference: Prior to installation of roofing and associated work, meet at project site, or other mutually agreed location, with Installer, roofing manufacturer, installers of related work, Contractor and other entities concerned with roofing performance, including the Architect and Owner. Record discussions and agreements and furnish copy to each participant. Provide at least seventy-two (72) hours advance notice to participants prior to convening pre-roofing conference. Review methods and procedures related to roofing work, including but not limited to the following:

1. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work performed by other trades.

2. Review roofing system requirements (drawings, specifications and other Contract Documents.

3. Review required submittals, both completed and yet to be completed.

4. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment and facilities needed to make progress and avoid delays.

5. Review required inspection, testing, certifying and material usage accounting procedures.

6. Review weather and forecasted weather conditions, and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not a mandatory requirement).

D. UL Listing: Provide labeled materials which have been tested and listed by UL in "Building Materials Directory" for application indicated, with "Class A" rated materials/system for roof slopes shown.

1. Provide roof covering materials bearing Classification Marking (UL) on bundle, package or container indicating that materials have been produced under UL's Classification and follow-up Service.

E. Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction:

1. Surface Burning Characteristics: ASTM E 84.

2. Fire Resistance Rating: ASTM E119.

3. Combustibility Characteristics: ASTM E 136.

F. Provide roofing system and component materials which have been evaluated by Factory Mutual System for fire spread, wind-uplift Class 90, and hail damage and are listed in "Factory Mutual Approval Guide" for Class I construction. System shall also meet ASCE-7 for wind uplift standards and Building Code of New York State in accordance with figure 1609.

1. Provide roof covering materials bearing FM approval marking on bundle, package or container, indicating that material has been subjected to FM's examination and follow-up inspection service.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical product data, installation instructions and recommendations for each type of roofing product required. Include data substantiating that materials comply with requirements.

1. For asphalt bitumen, provide label on each container or certification with each load of bulk bitumen, indicating flash point (FP), finished blowing temperature (FBT), softening point (SP) and equiviscous temperature (EVT).

2. Roof drains.

B. Submit samples of each roofing component specified herein, 12" x 12" size.

c. Pre-Roofing Conference: Submit copies of pre-roofing conference records.

D. Submit shop drawings for all flashing conditions; coordinate submittal with sheet metal flashing details and specifications noted in Section 076200. Shop drawings shall be drawn three (3) dimensional (axonometric).

E. Provide certified letter by roofing manufacturer that system complied with performance requirements.

1.6 JOB CONDITIONS

A. Weather Condition Limitations: Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed in accordance with manufacturer's recommendations and warranty requirements.

1.7 PRODUCT HANDLING

A. Store and handle roofing sheets in a manner which will ensure that there is no possibility of significant moisture pick-up.

B. Store in a dry, well ventilated, weather-tight place. Unless protected from weather or other moisture sources, do not leave unused felts on the roof overnight or when roofing work is not in progress. Store rolls of felt and other sheet materials on end on pallets or other raised surface. Handle and store materials or equipment in a manner to avoid significant or permanent deflection of deck.

1.8 ROOFING GUARANTEE AND WARRANTY

A. The Roof is under warranty. See attached at the end of this section. All work shall conform to the conditions of the warranty. No work shall be performed that compromises the terms of the warranty.

B. The Contractor shall guarantee the roof system for two years and provide a Membrane Manufacturer's 10-year System Warranty and a 20-year Membrane Materials only Warranty, starting on or after the date the Owners acceptance of the completed construction work.

1. The Contractor guarantees that the total roofing installation, together with all related composition flashing, plastic flashings, metal flashings, roof insulation, any vapor seal, cants, blocking, adhesives and seals installed in connection with same, will be watertight and free from defects as to materials, installation, and/or workmanship, for a period of two (2) years from the date of acceptance of the completed project. Except as otherwise expressly provided herein, provisions of Section 2.25 of Article II of the Agreement apply to this guarantee.

2. During the 2-year guarantee period, the Contractor agrees that within 24 hours of receipt of notice from the Fund, he will inspect and make immediate emergency repairs to defects or to leaks in roof system, and that within a reasonable time, he will restore the affected items to the standard of the original specifications.

3. All emergency and permanent work during the life of the Contractor's guarantee will be done without cost to the Fund, except in the event it is determined that such leaks were caused by abuse, lightning, hurricane, tornado, hail storm, other unusual climatic phenomena of the elements, or failure of adjacent or related work previously installed by others.

C. Manufacturer's Warranty

1. In addition to the Contractor's guarantee, the Contractor shall provide the roofing manufacturer's unconditional warranty that the roofing installation will be watertight and free from defects as to materials, installation, and/or workmanship. This warranty shall include roof insulation, tapered insulation, crickets, mechanical fasteners, and edge strips provided under this Contract. The membrane and insulation shall withstand and extended peak gust wind speed coverage up to 72 MPH. This warranty shall be 10 years for all roofing work. Such warranty shall commend with thFund's final acceptance of all work covered under the Contract or at such other date or dates as

the Fund may specified in writing prior to that time. The warranty shall not be limited to any dollar value.

2. A pro-rated materials-only warranty shall also be included that warrants the roof membrane will not prematurely deteriorate to the point of failure because of weathering for a period not less than 20 years.

3. Four copies of Manufacturer's warranty shall be provided to the Fund at the tie it accepts completion of the project. The form and content of such warranty shall be in accordance with the foregoing and shall be subject to the approval of the Fund.

PART 2 PRODUCTS

2.1 ROOFING SYSTEM

A. Roofing systems to be a multiple layer, SBS modified bitumen roofing made by Siplast as follows:

1. Non Green Roof Areas: Siplast Paradiene 20/30.

2. Green Roof Areas: Siplast Paradiene 20/30 plus Teranap and root barrier.

3. Temporary Roofing: Siplast Irex 40 (see Section 024119 for removal of existing roofing).

B. Equivalent systems made by Johns Manville, and/or Tamko are acceptable with the Architect's approval.

C. Primer: Asphalt cut-back primer, complying with ASTM D 41.

D. Bitumen: Roofing asphalt complying with ASTM D 312, type as recommended by roofing manufacturer.

E. Coping and roof expansion joint systems shall be part of the single source warranty by roofing manufacturer.

2.2 ROOF INSULATION

A. Polyisocyanurate Board Roof Insulation: Rigid, sloped (1/4" per foot) and flat, cellular thermal insulation with polyisocyanurate closed-cell foam core and manufacturer's standard facing laminated to both sides; complying with ASTM C 1289, average LTTR value as designated at mean temperatures indicated, after testing per ASTM C 1303 as follows:

1. Surface Burning Characteristics: Maximum flame spread of 25.

2. LTTR R-Value: 6.0/inch at 75 deg. F.

B. Acceptable Product/Manufacturer: "Enrgy 3" as manufactured by Johns Manville, or equal made by GAF or approved equal.

1. Roof membrane manufacturer must approve insulation in writing.

C. Cover insulation with 3/4" thick Perlite protection board equal to "Fesco" made by Johns Manville or approved equal.

2.3 MODIFIED BITUMINOUS BASE FLASHING

A. Provide modified bituminous base flashing system as determined by edge details and that is acceptable to roofing manufacturer. Base flashings shall include flashing of the following item:

1. Roof vents.
2. Curbs.
3. Parapets.
4. Compression rings/straps at VTR's.
5. Other conditions requiring base flashings.

2.4 CANT STRIPS

A. Provide cant strips formed of rigid insulation matching roof insulation or molded asphalt or coal tar impregnated organic fiber insulation material, 45° cant, unless otherwise indicated.

2.5 MISCELLANEOUS MATERIALS

A. Lead flashing sheet of 4 lb. flashing lead for pipe flashing of common desilverized pig lead.FM approved mechanical fasteners for attaching insulation to substrate.

B. Roof Walk: Preformed, skid-resistant boards consisting of modified asphalt, reinforcements and fillers with a ceramic granule surface on both sides. Dimension shall be 32" x 32" x 5/16". Johns Manville DynaTred Roof Walkway or approved equal.

C. Pitch Pockets: J.M. Chem-Curb system, consisting of a preformed structural urethane outer shell filled with a two-part sealant J.M. Flashing Cement. A two-part sealant adhesive equal to J.M. Flashing Cement shall be used to bond the shell to the roof finished surface as well as seal the edges.

D. Manufacturer's standard accessories required for "green" roof system.

E. Cover all new and temporary roofing with protection board equal to PC-3 made by W.R. Meadows.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where modified bituminous roofing is to be installed for compliance with requirements. Report conditions detrimental to built-up roofing work. Proceed after unsatisfactory conditions are corrected to permit proper installation of the work.

B. Clean substrate of dust, debris, and other substances detrimental to built-up roofing work. Remove sharp projections.

3.2 INSTALLATION, GENERAL

A. Install built-up roofing in accordance with manufacturer's recommendations and requirements of authorities having jurisdiction.

B. Substrate shall be clean, smooth and dry, free of projections which might puncture the felts.

c. Insure that all drains, curbs, blocking and roof penetrating components are in place before any roofing work starts. See that all roof drains are set 1" below the normal finish roof level to insure that additional flashing around the drains will not be built-up above the normal roof level and prevent proper drainage.

D. Provide a visible thermometer and thermostatic controls on all kettles. Discard any bitumen not heated in accordance with manufacturer's recommendations.

E. Provide a tarpaulin covering the wall below the bucket hoist to prevent staining of the wall with spilled bitumen.

F. Provide protection of coping, cant strips and other building components adjacent to the roof deck unloading area.

G. Assure good adhesion between substrate and members when temperature drops below 40 deg. F. Provide the following precautions:

1. No overheating of bitumen to compensate for rapid chilling is permitted.

2. Insulate buckets to carry hot bitumen.

3. Manual mopping no farther than 5 ft. in front of the felt rolls, and immediate unrolling of felts.

4. Immediate application of top pour and aggregate, before stored heat in the membrane dissipates.

5. Below 32 deg. F., store felts in a warm enclosure or pre-heat felts before application.

H. Install flashing, including counter flashing, as roof application progresses. If delay is unavoidable, trowel the top of the flashing with flashing cement close to the joint to prevent water from entering behind the flashing until the counter flashing is in place.

i. Start roofing application at far points of the deck and work toward area where base materials are fastened to the roof deck (to minimize trañc over newly applied roofing).

J. Weigh down all membrane edges left incomplete before splicing with other sections of membrane.

K. Provide enveloping of perimeter felts to prevent bitumen drippage.

L. Prohibit phased application in which saturated felts are left exposed overnight or longer before top plies and topcoat are applied. Place aggregate surface on same day as felts.

M. Inspect roof drains for obstructions and debris after the roofing work is completed.

N. Prime deck as recommended by roof membrane manufacturer.

0. Immediately after removal of existing roof membrane, apply temporary roofing following manufacturer's guidelines.

3.3 VAPOR RETARDER INSTALLATION

A. Prime surface of concrete deck with asphalt primer at a rate of 3/4 gal./100 sq. ft., unless a greater weight is required by roofing system manufacturer, and allow primer to dry.

B. Mop surface with hot bitumen and embed two plies of Type VI roofing felt in a full moping for each ply; lap plies 19". Apply bitumen at a rate of 20-23 lbs./sq. in.

c. Lap flexible flashings over air seal material of wall construction to provide continuity of the air barrier plane.

D. Glaze top surface of the vapor retarder if insulation is not placed immediately.

3.4 INSULATION

A. Extend insulation and Perlite board full thickness over entire surface to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation and mastic.

B. Apply a double layer of insulation of the required thickness, to make up the total thickness. Stagger joints between layers as recommended by the manufacturer.

C. Set first layer of insulation using mechanical fasteners spaced in accordance with FM requirements to meet 1-90 wind uplift. Apply second layer of insulation and Perlite board in steep asphalt.

D. Do not advance the laying of insulation ahead of roofing more than necessary for sequence of operations. Cover insulation exposed at end of each day's work (and when rain threatens) with waterproofing materials. Do not permit insulation to become wet. Remove and dispose of insulation which has become wet; replace before proceeding with roofing work.

E. Lay with edges in moderate contact but do not force into place.

F. Stagger end joints; or tape joints where recommended by the manufacturer.

G. Install temporary water cut-offs at completion of each day's work and remove upon resumption of work.

3.5 ROOFING

A. Do not apply hot bitumen under any condition that would cause foaming. Test substrate for excessive moisture by pouring one pit of steep asphalt at 400 deg. F. on the deck, at the start of each day's work, and at the start of each roof area or place. Substrate is too wet if test sample foams or can be easily (cleanly) stripped after cooling.

B. Bitumen Heating: Do not raise the temperature above the min. normal fluid-holding temperature more than one hour prior to time of application. Discard bitumen which has been held at an elevated temperature (as required for application) for a period exceeding 3 hours. Do not heat bitumen above the temperature required to ensure that the application viscosity results in adequate mopping weight and maximum adhesion to substrates. Determine the flash point of the bitumen, either by information from the bitumen producer or by suitable tests, and determine the maximum fire-safe handling temperature, and do not exceed that temperature in heating bitumen; but in no case heat bitumen to a temperature higher than 25 deg. F. below the flash point.

C. Set first layer of insulation using mechanical fasteners spaced in accordance with FM requirements to meet 1-90 wind uplift. Apply second layer of insulation and Perlite board in steep asphalt.

D. Set on Accessories: Where small roof accessories are set on built-up roofing membrane, set metal flanges in a bed of roofing cement, and seal penetration of membrane with bead of roofing cement to prevent flow of bitumen from membrane.

3.6 COMPOSITION FLASHING AND STRIPPING

A. Provide composition flashing at cant strips and other sloping and vertical surfaces, and at roof edges, and at penetrations through roof. Nail or provide other forms of mechanical anchorage of composition flashing to vertical surfaces, as recommended by manufacturer of primary roofing materials. Except where concealed by elastic flashing, apply a heavy coating of roofing cement over composition flashing.

B. Composition Stripping at Metal Flanges:

1. Asphalt: ASTM D 312, Type IV.

2. Set primed metal flange in bed of MBR Utility Cement and secure to nailer per primary roofing manufacturers' published details.

3. Cover this primed flange with reinforced modified bitumen membrane flashing consisting of a fiberglass scrim and polyester mat reinforcement, an elastomeric base material of SBS rubber and asphalt, with a white ceramic granule surface. 158 mils thick, 103 lbs. per 100 sf. Flashing must be continuously applied in a full mopping of Type IV roofing asphalt.

3.7 CLEANING UP

A. Take special care to prevent splashing bitumen onto adjacent surfaces and immediately remove all traces of such splashed and/or spilled material.

END OF SECTION

SECTION 078413 - FIRESTOPS AND SMOKESEALS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the firestops and smokeseals as shown on the drawings and/or specified herein, including, but not limited to, the following:

1. Penetrations through fire-resistance-rated floor and roof construction including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.
2. Penetrations through fire-resistance-rated walls and partitions including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.
3. Penetrations through smoke barriers and construction enclosing compartmentalized areas involving both empty openings and openings containing penetrating items.
4. Sealant joints in fire-resistance-rated construction.
5. Construction joints, including those between top of fire rated walls and underside of floors above; and those between exterior curtain walls and the outer perimeter edge of floor assemblies.

1.3 RELATED SECTIONS

A. Joint sealers - Section 079200.

c. Drywall - Section 092900.

1.4 REFERENCES

A.	ASTM E 814	"Standard Method of Fire Tests of Through-Penetration Firestops."
B.	UL 1479, UBC 7-5	(Both are same as A. above).
c.	ASTM E 119	"Standard Method of Fire Tests of Building Construction and Materials."
D.	UL 263, UBC 7-1	(Both are same as C. above).
E.	UL 2079	"Tests For Fire Resistance of Building Joint Systems."
F.	ASTM E 1399	"Test For Dynamic Movement Conditions."
G.	ASTM E 1966	(Same as E. above).

H. Published Through-Penetration Systems by recognized independent testing agencies.

1. UL Fire Resistance Directory, Volume II of current year.

2. Warnock Hersey Certification Listings, current year.

3. Omega Point Laboratories, current year.

1.5 SUBMITTALS

A. Submit manufacturer's product literature for each type of firestop material to be installed. Literature shall indicate product characteristics, typical uses, performance, limitation criteria, test data and indication that products comply with specified requirements.

B. Submit shop drawings detailing materials, installation methods, and relationships to adjoining construction for each firestop system, and each kind of construction condition penetrated and kind of penetrating item. Include firestop design designation of qualified testing and inspection agency evidencing compliance with requirements for each condition indicated.

1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each through-penetration firestop configuration for construction and penetrating items.

c. Material Safety Data Sheets: Submit MSDS for each firestop product.

D. Submit qualifications of firestop installer, including letter from firestop manufacturer of products proposed to be installed, wherein manufacturer approves or recognizes as trained/ or certifies installer for installation of that manufacturer's products.

E. Manufacturer's Letters: For installations or configurations not covered by a UL or Warnock Hersey design number, a recommendation shall be obtained from the manufacturer, in writing, for the specific application.

1.6 QUALITY ASSURANCE

A. General: Provide firestopping systems that are produced and installed to resist the spread of fire, and the passage of smoke and other gases.

B. Firestopping materials shall conform to Flame (F) and Temperature (T) ratings as required by local building code and as tested by nationally accepted test agencies per ASTM E 814 or UL 1479. The F rating must be a minimum of one (1) hour but not less than the fire resistance rating of the assembly being penetrated. T rating, when required by code authority, shall be based on measurement of the temperature rise on the penetrating item(s). The fire test shall be conducted with a minimum positive pressure differential of 0.01 inches of water column.

c. Firestopping products shall be asbestos free and free of any PCBs.

D. Do not use any product containing solvents or that requires hazardous waste disposal.

E. Do not use firestop products which after curing, dissolve in water.

F. Do not use firestop products that contain ceramic fibers.

. Firestopping Installer Qualifications: Firestop application shall be performed by a single firestopping contractor who specializes in the installation of firestop systems, whose personnel to be utilized have received specific training and certification or approval from the proposed respective firestop manufacturer, and firestop installer shall have a minimum of three years experience (under present company name) installing firestop systems of the type herein specified.

H. Mock-Up: Prepare job site mock-ups of each typical Firestop System proposed for use in the project. Approved mock-ups will be left in place as part of the finished project and will constitute the quality standard for the remaining work.

i. For firestopping exposed to view, traffic, moisture, and physical damage, provide products that do not deteriorate when exposed to these conditions.

1. For floor penetrations with annular spaces exceeding 4 inches or more in width and exposed to possible loading and trañc, provide firestop systems capable of supporting the floor loads involved either by installing floor plates or by other means.

J. Conform to VOC requirements for sealants and primers as specified in Section 079200.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturer's original unopened containers with manufacturer's name, product identification, lot numbers, UL or Warnock Hersey labels, and mixing and installation instructions, as applicable.

B. Store materials in the original, unopened containers or packages, and under conditions recommended by manufacturer.

c. All firestop materials shall be installed prior to expiration of shelf life.

1.8 PROJECT CONDITIONS

A. Verify existing conditions and substrates before starting work

B. Do not use materials that contain solvents, show sign of damage or are beyond their shelf life.

c. During installation, provide masking and drop cloths as needed to prevent firestopping products from contaminating any adjacent surfaces.

D. Conform to ventilation requirements if required by manufacturer's installation instructions or Material Safety Data Sheet.

E. Weather Conditions: Do not proceed with installation of firestop products when temperatures are in excess or below the manufacturer'srecommendations.

F. Schedule installation of firestop products after completion of penetrating item installation but prior to covering or concealing of openings.

G. Coordinate this work asrequired with work of other trades.

1.9 SEQUENCING AND SCHEDULING

A. Pre-Installation Conference: Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

B. Sequence: Perform work of this and other sections in proper sequence to prevent damage to the firestop systems and to ensure that their installation will occur prior to enclosing or concealing work.

c. Install all firestop systems after voids and joints are prepared sufficiently to accept the applicable firestop system.

D. Do not cover firestop systems until they have been properly inspected and accepted by the authority having jurisdiction.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with requirements, provide products of one of the following manufacturers:

1. Tremco
2. Bio-Fireshield
3. 3M
4. Specified Technologies Inc.
5. U.S. Gypsum Co.
6. Nelson
7. Hilti, Inc.
8. Grace Flame Safe

2.2 FIRESTOPPING, GENERAL

A. Compatibility: Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by firestopping manufacturer based on testing and field experience.

B. 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:

1. Permanent forming/damming/backing materials including the following:

a. Semirefractory fiber (mineral wool) insulation.
b. Sealants used in combination with other forming/damming materials to prevent leakage of fill materials in liquid state.
C. Fire-rated form board.
d. Joint fillers for joint sealants.

2. Temporary forming materials.
3. Substrate primers.
4. Collars.
S. Steel sleeves.

a. Applications: Provide firestopping systems composed of materials specified in this Section that comply with system performance and other requirements.

D. Smokeseals at top of partitions shall be flexible to allow for partition deflection.

2.3 FILL MATERIALS FOR THROUGH-PENETRATION FIRESTOP SYSTEMS

A. Endothermic, Latex Compound Sealant: Single-component, endothermic, latex formulation.

B. Intumescent, Latex Sealant: Single-component, Intumescent, latex formulation.

c. Intumescent Putty: Non-hardening, dielectric, water-resistant putty containing no solvents, inorganic fibers, or silicone compounds.

D. Intumescent Wrap Strips: Single-component, elastomeric sheet with aluminum or polyethelene foil on one side.

E. Job-Mixed Vinyl Compound: Prepackaged vinyl-based powder product for mixing with water at Project site to produce a paintable compound, passing ASTM E 136, with flame-spread and smoke-developed ratings of zero per ASTM E 84.

F. Mortar: Prepackaged dry mix composed of a blend of inorganic binders, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a non-shrinking, homogeneous mortar.

G. Pillows/Bags: Re-usable, heat-expanding pillows/bags composed of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents and fire-retardant additives.

H. Silicone Foam: Two-component, silicone-based liquid elastomer that, when mixed, expands and cures in place to produce a flexible, non-shrinking foam.

I. Silicone Sealant: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealant of grade indicated below:

1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces and non-sag formulation for openings in vertical and other surfaces requiring a non-slumping/gunnable sealant, unless firestop system limits use to non-sag grade for both opening conditions.

2.4 FIRE-RESISTIVE ELASTOMERIC JOINT SEALANTS

A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated that complies with ASTM C 920 requirements, including those referenced for Type, Grade, Class, and Uses, and requirements specified in this Section applicable to fire-resistive joint sealants.

1. Sealant Colors: Color of exposed joint sealants as selected by the Architect.

B. Single-Component, Neutral-Curing Silicone Sealant: Type S; Grade NS; Class 25; exposure-related Use NT, and joint-substrate-related Uses M, G, A, and (as applicable to joint substrates indicated) 0.

1. Additional Movement Capability: Provide sealant with the capability to withstand 33 percent movement in both extension and compression for a total of 66 percent movement.

C. Multi-Component, Non-Sag, Urethane Sealant: Type M; Grade NS; Class 25; exposure-related Use NT, and joint-substrate-related Uses M, A, and (as applicable to joint substrates indicated) 0.

1. Additional Movement Capability: Provide sealant with the capability to withstand 40 percent movement in extension and 25 percent in compression for a total of 65 percent movement in joint

width existing at time of installation, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, and remain in compliance with other requirements of ASTM C 920 for uses indicated.

D. Single-Component, Non-Sag, Urethane Sealant: Type S; Grade NS; Class 25; and Uses NT, M, A, and (as applicable to joint substrates indicated) 0.

2.5 MINERAL FIBER/CERAMIC WOOL NON-COMBUSTIBLE INSULATION (FIRE SAFING)

A. Provide min. 4 pcf Thermafiber as manufactured by Thermafiber Co., min. 4 pcf FBX Safing Insulation as manufactured by Fibrex, or approved equal to suit conditions and to comply with fire resistance and firestop manufacturer's requirements.

B. Material shall be classified non-combustible per ASTM E 119.

2.6 MIXING

A. For those products requiring mixing prior to application, comply with firestopping manufacturer's directions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce firestopping products of uniform quality with optimum performance characteristics for application indicated.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions with Installer present, for compliance with requirements for opening configuration, penetrating items, substrates, and other conditions affecting performance of firestopping. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Clean out openings and joints immediately prior to installing firestopping to comply with recommendations of firestopping manufacturer and the following requirements:

1. Remove all foreign materials from surfaces of opening and joint substrates and from penetrating items that could interfere with adhesion of firestopping.

2. Clean opening and joint substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.

3. Remove laitance and form release agents from concrete.

B. Priming: Prime substrates where recommended by firestopping manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

C. Masking Tape: Use masking tape to prevent firestopping from contacting adjoining surfaces that will remain exposed upon completion of work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestopping materials. Remove tape as soon as it is possible to do so without disturbing seal of firestopping with substrates.

3.3 CONDITIONS REQUIRING FIRESTOPPING

A. Building Exterior Perimeters

1. Where exterior facing construction is continuous past a structural floor, and a space (i.e. construction joint) would otherwise remain open between the inner face of the wall construction and the outer perimeter edge of the structural floor, provide firestopping to equal the fire resistance of the floor assembly.

   a. If mineral wool is part of firestop system, the mineral wool must be completely covered by appropriate thickness of UL or Warnock Hersey listed firestop sealant or spray.
   b. Refer to Article 3.6 herein for description of fire safing insulation.

2. Firestopping shall be provided whether or not there are any clips, angles, plates, or other members bridging or interconnecting the facing and floor systems, and whether or not such items are **C0ntinU0US.**

3. Where an exterior wall passes a perimeter structural member, such as a girder, beam, or spandrel, and the finish on the interior wall face does not continue up to close with the underside of the structural floor above, thus interrupting the fire-resistive integrity of the wall system, and a space would otherwise remain open between the interior face of the wall and the structural member, provide firestopping to continuously fill such open space.

B. Interior Walls and Partitions

1. Construction joints between top of fire rated walls and underside of floors above, shall be firestopped.

2. Firestop system installed shall have been tested by either UL or Omega Point, including exposure to hose stream test and including for use with steel fluted deck floor assemblies.

3. Firestop system used shall allow for deflection of floor above.

c. Penetrations

1. Penetrations include conduit, cable, wire, pipe, duct, or other elements which pass through one or both outer surfaces of a fire rated floor, wall, or partition.

2. Except for floors on grade, where a penetration occurs through a structural floor or roof and a space would otherwise remain open between the surfaces of the penetration and the edge of the adjoining structural floor or roof, provide firestopping to fill such spaces in accordance with ASTM E 814.

3. These requirements for penetrations shall apply whether or not sleeves have been provided, and whether or not penetrations are to be equipped with escutcheons or other trim. If penetrations are sleeved, firestop annular space, if any, between sleeve and wall of opening.

D. Provide firestopping to fill miscellaneous voids and openings in fire rated construction in a manner essentially the same as specified herein before.

3.4 INSTALLING THROUGH PENETRATION FIRESTOPS

A. General: Comply with the through penetrations firestop manufacturer's installation instructions and drawings pertaining to products and applications indicated.

B. Install forming/damming materials and other accessories of types required to support fill materials during their application and in the position needed to produce the cross sectional shapes and depths required to achieve fire ratings of designated through-penetration firestop systems. After installing fill materials, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.

C. Install fill materials for through penetration firestop systems by proven techniques to produce the following results:

1. Completely fill voids and cavities formed by openings, forming materials, accessories, and penetrating items.

2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.

3. For fill materials that will remain exposed after completing work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.5 INSTALLING FIRE RESISTIVE JOINT SEALANTS

A. General: Comply with ASTM C 1193, and with the sealant manufacturer's installation instructions and drawings pertaining to products and applications indicated.

B. Install joint fillers 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 and develop fire resistance rating required.

c. 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 width that optimum sealant movement capability. Install sealants at the same time joint fillers are installed.

D. Tool no sag sealants immediately after sealant application and prior to the time skinning or curing begins. Form smooth, uniform beads of configuration indicated or required to produce fire resistance rating, as well as to eliminate air pockets, and to ensure contact and adhesion of sealants with sides of joint. Remove excess sealant from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

3.6 INSTALLING FIRESAFING INSULATION

A. Install fire safing insulation utilizing welded or screw applied galvanized steel impaling pins and retaining clips; space clips or pins 24" o.c. maximum.

B. Completely fill voids in areas where safing insulation is required. At spandrel conditions/floor edges, depth of insulation top to bottom shall be at least four (4) inches.

c. Cover top of all safing insulation with firestop sealant or spray.

3.7 FIELD QUALITY CONTROL

A. Inspecting agency may be employed and paid by the Owner to examine completed firestopping to determine if it is being installed in compliance with requirements.

B. Inspecting agency will report observations promptly and in writing to Contractor, Owner and Architect.

c. Do not proceed to enclose firestopping with other construction until reports of examinations are issued.

D. Where deficiencies are found, Contractor must repair or replace firestopping so that it complies with requirements.

3.8 CLEANING

A. Clean off excess fill materials and sealants adjacent to openings and joints as work progresses by methods and with cleaning materials approved by manufacturers of firestopping products and of products in which opening and joints occur.

B. Protect firestopping 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 firestopping immediately and install new materials to product firestopping complying with specified requirements.

END OF SECTION

SECTION 079200 - JOINT SEALERS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. The Work of this Section includes all labor, materials, equipment and services necessary to complete the joint sealers work as shown on the drawings and/or specified herein, including but not necessarily limited to the following:

1. Flashing reglets and retainers.
2. Exterior wall joints not specified to be sealed in other Sections of work. (Type 01).
3. Interior wall joints not specified to be sealed in other Sections of work. (Type 02).
4. Control and expansion joints in walls.
5. Joints at wall penetrations.
6. Joints between items of equipment and other construction.
7. Joint sealer at sills of metal stud runners.
8. All other joints required to be sealed to provide a positive barrier against penetration of air and moisture.

1.3 RELATED SECTIONS

A. Firestop sealants — Section 078413.

c. Glazing sealants - Section 088000.

D. Acoustic sealant within drywall construction - Section 092900.

1.4 QUALITY ASSURANCE

A. Qualification of Installers: Use only personnel who are thoroughly familiar, skilled and specially trained in the techniques of sealant work, and who are completely familiar with the published recommendations of the sealant manufacturer.

B. Pre-Construction Field Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to project joint substrates according to the method in ASTM C 794 and C 1521 that is appropriate for the types of Project joints.

C. Perform testing per ASTM C 1248 on interior and exterior sealants to determine if sealants or primers will stain adjacent surfaces. No sealant work shall start until results of these tests have been submitted to the Architect and he has given his written approval to proceed with the work.

D. VOC Content of Sealants & Sealant Primers:

1. The volatile organic compound (VOC) content of sealants and sealant primers shall not exceed the limits defined in Rule #1168, "Adhesive and Sealant Applications" of the South Coast Air Quality Management District (SCAQMD), of the State of California. The VOC limits defined by SCAQMD (based on 1/7/05 amendments) are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds (determined by U. S. EPA Reference Test Method 24).

2. Sealants: 250

3. Sealant Primers: 250

1.5 SUBMITTALS

A. Shop Drawings: Submit shop drawings showing all joint conditions, indicating relation of adjacent materials, all sealant materials (sealant, bond breakers, backing, primers, etc.), and method of installation.

1. Submit joint sizing calculations certifying that movement capability of sealant is not being exceeded.

B. Samples: Submit the following:

1. Color samples of sealants.

2. Sealant bond breaker and joint backing.

C. Product Data: Submit manufacturer's technical information, VOC content and installation instructions for:

1. Sealant materials and primers, indicating that material meets standards specified herein.

2. Backing rods.

D. Submit manufacturer's certification as required by Article 1.6 herein.

E. Submit results of testing required in Article 1.4 herein.

1.6 MANUFACTURER'S RESPONSIBILITY AND CERTIFICATION

A. Contractor shall require sealant manufacturer to review the Project joint conditions and details for this Section of the work. Contractor shall submit to the Architect written certification from the sealant manufacturer that joints are of the proper size and design, that the materials supplied are compatible with adjacent materials and backing, that the materials will properly perform to provide permanent watertight, airtight or vaportight seals (as applicable), and that materials supplied meet specified performance requirements.

1.7 ENVIRONMENTAL CONDITIONS

A. Temperature: Install all work of this Section when air temperature is above forty (40) degrees F. and below eighty (80) degrees F., unless manufacturer submits written instructions permitting sealant use outside of this temperature range.

B. Moisture: Do not apply work of this Section on surfaces which are wet, damp, or have frost.

1.8 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section, before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

c. Storage

1. Store sealant materials and equipment under conditions recommended by their manufacturer.

2. Do not use materials stored for a period of time exceeding the maximum recommended shelf life of the material.

1.9 GUARANTEE

A. Provide a written, notarized guarantee from the manufacturer and the applicator stating that the applied sealants shall remain watertight for a period of ten (10) years.

B. Guarantee shall be in a form acceptable to the Owner and executed by an authorized individual.

c. Guarantee shall further state that installed sealant is guaranteed against:

1. Adhesive or cohesive failure of sealant joints.

2. Crazing greater than three (3) mils in depth developing on surface of material.

3. Staining of surfaces adjacent to joints by sealants or primer by migration through building materials in contact with them.

4. Chalking, or visible color change on surface of cured sealant.

5. Increase or decrease of "Shore A" durometer hardness (5 second reading) of sealant of more than thirty (30) percent of seven (7) day value of"Shore A" durometer hardness of sealant.

D. Include in guarantee provision, agreement to repair and/or replace, at Contractor's expense, sealant defects which develop during guarantee period, because of faulty labor and/or materials.

PART 2 PRODUCTS

2.1 SEALANT MATERIALS

A. Exterior Wall Sealant (Type 01): Provide one (1) part non-sag sealant equal to No. 790 or 795 made by Dow Corning, "Silpruf SCS 2000" or "LM SCS 2700" made by G.E. or "Spectres 1" or"Spectres 3" made

by Tremco or "Sonolastic 150" by Sonneborn conforming to the minimum standards of ASTM C 920, Type S, Grade NS, Class 50.

B. Interior Sealant(Type 02): Provide a one (1) part acrylic based sealant conforming to ASTM C 834, equal to "AC-20+ Silicone" made by Pecora or equal made by Tremco.

C. Specialty Sealants: See product information sheets at the end of this section.

2.2 MISCELLANEOUS MATERIALS

A. Back-Up Materials: Provide back-up rods and preformed joint fillers, non-staining, non-absorbent, compatible with sealant and primer, and of a resilient nature, equal to "Sof-Rod" made by Nomaco Inc. or approved equal, twenty-five (25) percent wider than joint width. Materials impregnated with oil, bitumen or similar materials shall not be used. Provide back-up materials only as recommended by sealant manufacturer in writing.

B. Provide bond breakers, where required, of polyethylene tape as recommended by manufacturer of sealant.

c. Provide primers recommended by the sealant manufacturer for each material to receive sealant. Note that each exterior joint must be primed prior to sealing.

D. Provide solvent, cleaning agents and other accessory materials as recommended by the sealant manufacturer.

E. Materials shall be delivered to the job in sealed containers with manufacturer's original labels attached. Materials shall be used per manufacturer’s printed instructions.

2.3 PRE-FORMED SEAL

A. Provide "Emseal" installed to twenty-five (25) percent compression, as manufactured by Emseal or approved equal made y W.N. Williams or Polytite. Filler depth shall be 2 xjoint width.

2.4 SILL SEALER

A. Provide "Dow Sill Seal" made by Dow Chemical Co. or approved equal.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where joint sealers are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications and conditions required by this Project where more stringent installation requirements are specified herein, such requirements shall apply.

B. Sample Section of Sealant

1. During sealant installation work in exterior wall, the manufacturer of sealant shall send his representative to the site, under whose supervision a section of the wall (used as ”control section") shall be completed for purposes of determining performance characteristics of sealant in joints. Architect shall be informed of time and place of such installation of control section.

2. Control section shall be installed according to specification given herein and shall not be considered as acceptable until written acceptance is provided by the Architect.

3. Accepted control section shall be standard to which all other sealant work must conform.

C. Supervision: The Contractor shall submit to the Architect written certification from the sealant manufacturer that the applicators have been instructed in the proper application of their materials. The Contractor shall use only skilled and experienced workmen for installation of sealant.

D. Apply sealant under pressure with a hand or power actuated gun or other appropriate means. Gun shall have nozzle of proper size and provide suFcient pressure to completely fill joints as detailed. Neatly point or tool joint to provide the contour as indicated on the drawings.

E. Preparation and Application

1. Thoroughly clean all joints, removing all foreign matter such as dust, oil, grease, water, surface dirt and frost. Sealant must be applied to the base surface. Previously applied film must be entirely removed.

2. Stone, masonry and concrete surfaces to receive sealant shall be cleaned where necessary by grinding, water blast cleaning, mechanical abrading, or combination of these methods as required to provide a clean, sound base surface for sealant adhesion.

   a. Do not use any acid or other material which might stain surfaces.
   b. Remove laitance by grinding or mechanical abrading.
   c. Remove loose particles present or resulting from grinding, abrading, or blast cleaning by blowing out joints with compressed air, oil and water free, or vacuuming joints prior to application of primer or sealant.

3. Clean non-porous surfaces such as metal and glass chemically. Remove protective coatings on metallic surfaces by solvent that leaves no residue and is compatible with sealant. Use solvent and wipe dry with clean, dry lint free paper towels. Do not allow solvent to air dry without wiping. Clean joint areas protected with masking tape or strippable films as above after removal of tape film.

4. Do not seal joints until they are in compliance with drawings, or meet with the control section standard.

5. Joint Size and Sealant Size: Joints to receive sealant shall be at least 1/4" wide. In joint 1/4" to 3/8" wide, sealant shall be 1/4" deep. In joints wider than 3/8” and up to 1" wide, sealant depth shall be one half the joint width. For joints wider than 1", sealant depth shall be as recommended by the sealant manufacturer. Depth of joint is defined as distance from outside face of joint to closest point of the filler.

6. Primer: Thoroughly clean joints and apply primer to all surfaces that will receive sealant. Apply primer on clean, dry surfaces, and prior to installation of joint backing. Completely wet both inner faces of the joint with primer. Mask adjacent surfaces of joint with non-staining masking tape prior to priming.

7. Joint Backing: In joints where depth of joint exceeds required depth of sealant, install joint backing (after primer is dry) in joints to provide backing and proper joint shape for sealant. Proper shape for sealant is a very slight "hourglass" shape, with back and front face having slight concave curvature. Use special blunt T-shaped tool or roller to install joint backing to the proper and uniform depth required for the sealant. Joint backing shall be installed with approximately twenty-five (25) percent compressions. Do not stretch, twist, braid, puncture, or tear joint backing. Butt joint backing at intersections.

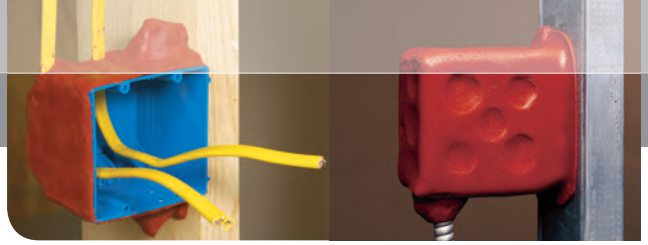
8. Bond Breaker: Install bond breaker smoothly over joint backing so that sealant adheres only to the sides of the joint and not backing.

9. Sealant Application: Apply sealant in accordance with the manufacturer's application manual and manufacturer's instructions, using hand guns or pressure equipment, on clean, dry, properly prepared substrates, completely filling joints to eliminate air pockets and voids. Mask adjacent surfaces of joint with non-staining masking tape. Force sealant into joint in front of the tip of the "caulking gun" (not pulled after it) and force sealant against sides to make uniform contact with sides of joint and to prevent entrapped air or pulling of sealant off of sides. Fill sealant space solid with sealant.

10. Tooling: Tool exposed joints to form smooth and uniform beds, with slightly concave surface conforming to joint configuration per Figure SA in ASTM C 1193. Finished joints shall be straight, uniform, smooth and neatly finished. Remove masking tape immediately after tooling of sealant and before sealant face starts to "skin" over. Neatly remove any excess sealant from adjacent surfaces of joint, leaving the work in a neat, clean condition.

11. Replace sealant which is damaged during construction process.

END OF SECTION



3M™ Fire Barrier Moldable Putty Pads MPP+

Product Data Sheet

FIRE BARRIER: UP TO 4 HOUR Fire Protection

SMOKE SEAL: L RATED Meets Optional L Requirements

WALL OPENING: UP TO 2 HOUR Fire Protection

SOUND BARRIER: STC 52 In STC 53-Rated Wall Assembly

FM APPROVED

SUBJECT TO THE CONDITIONS OF APPROVAL AS A WALL & FLOOR PENETRATION FIRESTOP WHEN INSTALLED AS DESCRIBED IN THE CURRENT EDITION OF THE FMRC APROVAL GUIDE

ULC LISTED

FILL, VOID OR CAVITY MATERIALS 90G9

CLASSIFIED UL

WALL OPENING PROTECTIVE MATERIAL FIRE RESISTANCE CLASSIFICATION SEE UL FIRE RESISTANCE DIRECTORY 90G9

CLASSIFIED UL

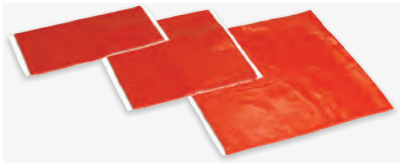
FILL, VOID, OR CAVITY FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS SEE UL FIRE RESISTANCE DIRECTORY 90G9

1. Product Description

3M™ Fire Barrier Moldable Putty Pads MPP+ are a one-part, ready-to-use, intumescent wall-opening protective. When properly applied to the back of electrical outlet boxes, 3M™ Fire Barrier Moldable Putty Pads MPP+ help control the spread of fire, smoke and noxious gases through fire-restive walls and partitions. Installed in accordance with the UL wall-opening protective listing (UL Category CLIV), the product helps achieve up to 2-hour ratings in a variety of wall constructions. 3M™ Fire Barrier Moldable Putty Pads MPP+ can effectively provide protection for back-to-back metallic electrical boxes. in certain configurations.

3M™ Fire Barrier Moldable Putty Pads MPP+ are also used as a firestop material in through-penetration firestop systems. 3M™ Fire Barrier Moldable Putty Pads MPP+ help to maintain a firestop penetration seal for up to 4 hours. 3M™ Fire Barrier Moldable Putty Pads MPP+ exhibit excellent adhesion to a full range of construction substrates and penetrants. The pads are easily molded by hand (no mixing required). In addition to its fire-resistant properties, the 1/10th in. (2.54mm) thick pads have airborne sound reduction characteristics which helps minimize sound transmission through assemblies requiring an STC rating.

Color: Dark Red



4 in. x 8 in. (101.6mm x 203.3mm), 7 in. x 7 in. (177.8mm x 177.8mm) and 9.5 in. x 9.5 in. (241.2mm x 241.3mm) pad sizes available.

Product Features

- Firestop tested up to 4 hours in accordance with ASTM E 814 (UL 1479) & CAN/ULC-S115
- Wall opening protective tested up to 2 hours in accordance with UL 263
- Provides draft and cold smoke seal
- Pliable and conformable—molds easily into required shape
- Helps reduce noise transfer*
- Excellent adhesion
- Re-enterable/repairable
- Halogen-free and solvent-free
- Excellent aging properties
- Low VOC
- Will not dry out or crumble
- Red color widely recognized as a fire protective product

Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants.

**Minimizes noise transfer—STC-Rating of 52 when tested in STC 53-rated wall assembly.*

2. Applications

4 in. x 8 in. (101.6mm x 203mm) 3M™ Fire Barrier Moldable Putty Pads MPP+ are typically used as a wall opening protective to meet building requirements, for protection of membrane penetrations made by listed steel or non-metallic electrical boxes. It is also used to seal gaps between cables in multiple penetrations (including fiber optic inner duct) and to firestop cable bundles, insulated pipe, electrical conduit and metal pipe. Larger sized pads, 7 in. x 7 in. and 9.5 in x 9.5 in. (177.8mm x 177.8mm and 241.2mm x 241.2mm) are widely used to firestop metallic and non-metallic electrical outlet boxes up to 14 in. x 4.5 in. by 2-1/2 in. (355.6mm x 114.3mm x 63.5mm) deep. For larger applications, pads can be molded together by hand.

3. Specifications

3M™ Fire Barrier Moldable Putty Pads MPP+ shall be a one component, ready-to-use, intumescent elastomer capable of expanding a minimum of 3 times at 1000°F. The material shall be thixotropic and shall be applicable to overhead, vertical and horizontal firestops. Under normal conditions, 3M™ Fire Barrier Moldable Putty Pads MPP+ shall be noncorrosive to metal and compatible with synthetic cable jackets. The putty shall be listed by independent test agencies such as UL, Intertek or FM. 3M™ Fire Barrier Moldable Putty Pads MPP+ shall be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems and CAN/ULC S115 Standard Method of Fire Tests of Firestop Systems. 3M™ Fire Barrier Moldable Putty Pads MPP+ meets the requirements of the IBC, NFPA 5000, NEC (NFPA 70), NFPA 101 and NCB (Canada) Building Codes.

Typically Specified MasterFormat (2004)

Section 07 84 00 – Firestopping

Related Sections

Section 07 84 16 – Annular Space Protection
Section 07 86 00 – Smoke Seals
Section 07 87 00 – Smoke Containment Barriers
Section 07 27 00 – Thermal and Moisture Protection Firestopping
Section 21 00 00 – Fire Suppression
Section 26 00 00 – Electrical

For technical support relating to 3M™ Fire Protection Products and Systems, call: 1-800-328-1687
For more information on 3M™ Fire Protection Products, visit: www.3M.com/firestop

4. Performance & Typical Physical Properties

Color:	Dark Red
Nominal Density:	10–12 lbs./gal. (1.2–1.45kg/L)
Nominal Thickness:	1/10 in. (2.54mm)
Surface Burning (ASTM E 84)**:**	Flame Spread 0, Smoke Development 0
Heat Expansion:	Begins at 350°F (177°C) Significant at 400°F (204°C) Free Expansion is Nominal 3 times
STC (ASTM E 90 and ASTM E 413)**:** **Tested in STC 53 rated wall assembly**	52 when tested on back-to-back metallic electrical boxes in certain configurations
VOC Less H_2O and Exempt Solvents:	< 250g/L

Dimensions: 4 in. x 8 in. x 1/10 in. (101.6mm x 203.2mm x 2.5mm)
Unit Volume: 2.52 in.^{3} (41.4cm^3)
Unit Weight: 2.7 oz (76g)

Dimensions: 7 in. x 7 in. x 1/10 in. (177.8mm x 177.8mm x 2.5mm)
Unit Volume: 4.63 in.^{3} (76.0cm^3)
Unit Weight: 4.1 oz (116g)

Dimensions: 9.5 in. x 9.5 in. x 1/10 in. (241.3mm x 241.3mm x 2.5mm)
Unit Volume: 6.1 in.^{3} (139.8cm^3)
Unit Weight: 7.6 oz (215g)

5. Packaging, Storage, Shelf Life

Packaging: Corrugated cardboard box with liner between individual pads.

Storage: 3M™ Fire Barrier Moldable Putty Pads MPP+ should be stored indoors in dry conditions.

Shelf Life: 3M™ Fire Barrier Moldable Putty Pads MPP+ shelf life is indefinite in original unopened containers. Product will not dry or crumble in opened containers. Normal stock and stock rotation practices are recommended.

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable UL, Intertek or other third-party drawings and system details.

Preparatory Work: The surface of the electrical box, or opening and any penetrating items should be cleaned (i.e. free of dust, grease, oil, loose materials, rust or other substances) to allow for the proper adhesion of the 3M™ Fire Barrier Moldable Putty+ Pad. Ensure that the surface of the substrates are not wet and are frost-free.

Installation Details: Electrical boxes must be firestopped under the following conditions: boxes larger than 16 sq. in. (103 sq. cm), if horizontal spacing between boxes is less than 24 in. (609.6mm), when multiple boxes are located in one stud cavity or if the aggregate of all boxes exceeds 100 sq. in. per 100 sq. ft. (645 sq. cm. per 9.29 sq. m) — refer to listed system details and applicable local building code requirements. For electrical box installations, a minimum of 1/10 in. (2.5mm) thick putty application is required. 3M™ Fire Barrier Moldable Putty Pads MPP+ are to be installed to completely cover the exterior of the outlet box (except for the side against the stud). To firestop penetrations, install the applicable depth of backing material (if required), remove the desired amount of putty from the pad, form (if necessary) and install as detailed within the listed system. Make sure that putty is in complete contact with the substrate and penetrating item(s).

Note: Partial pads can be pieced together and the seams between partial pads should overlap a minimum of 1/8 in. with the seams worked with the fingertips to create adhesion at the seam.

Limitations: Over application (i.e., using excessive amount of material) of product to vertical surfaces may cause sagging, follow system details. Product is not impaired by freezing but should be warmed to 32°F (0°C) before applying.

7. Maintenance

No maintenance is expected when installed in accordance with the applicable UL, Intertek, FM or other third-party listed system. Once installed, if any section of the 3M™ Fire Barrier Moldable Putty Pad MPP+ is damaged, the following procedure will apply: remove damaged putty, clean the affected area and install the proper thickness of putty, ensuring it bonds to the substrate and adjacent putty (product from damaged area can be reused if it is free from contaminants). Putty can be molded together at new/existing putty overlap.

8. Availability

3M™ Fire Barrier Moldable Putty Pads MPP+ are available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Moldable Putty Pads MPP+ are available in the following sizes: (10 pads/pack, 10 packs/case) 4 in. x 8 in. x 1/10 in. (101.6mm x 203.2mm x 2.5mm), (20 pads/case) 7 in. x 7 in. 1/10 in. (177.8mm x 177.8mm x 2.5mm), (20 pads/case) 9.5 in. x 9.5 in. 1/10 in. (241.3mm x 241.3mm x 2.5mm); red-colored firestop material. For additional technical and purchasing information regarding this and other 3M Fire Protection Products, please call: 1-800-328-1687 or visit www.3M.com/firestop.

9. Safe Handling Information

Consult product's Material Safety Data Sheet (MSDS) from country-of-use prior to handling and disposal.

Industrial Adhesives and Tapes Division
3M Center, Building 230-BS-37
St. Paul, MN 55144-1000
800-328-1687
877-369-2923 (Fax)
www.3M.com/firestop

3M™ Smoke and Sound Sealant SS 100

Product Data Sheet

SOUND BARRIER
STC 56
In STC 56-rated Wall Assembly

ELASTOMERIC
±10%
Movement Capability

SMOKE SEAL
L RATED
Meets Air Leakage Requirements

1. Product Description

3M™ Smoke and Sound Sealant SS 100 is an economical, ready to use, gun-grade, elastomeric sealant that dries to form a monolithic flexible seal that helps prevent unwanted noise infiltration and mitigates the spread of smoke and toxic gas during a fire. 3M™ Smoke and Sound Sealant SS 100 is designed to seal construction joints and through penetrations in non-fire-rated wall and floor assemblies, including smoke partitions and acoustic assemblies. In addition, this product acts as a draftstop to prevent unwanted air movement and provides a barrier against dust and other airborne particulates.

A versatile smoke, sound and draftstop sealant that minimizes noise and helps prevent smoke migration with movement capability for dynamic construction joints

Available in: White ☐

Product Features

- Creates an effective barrier to mitigate smoke and toxic gas spread
- Helps minimize sound transfer
- ±10% movement capability
- An effective draftstop
- Re-enterable / repairable
- Sag-resistant formulation
- Excellent adhesion
- Paintable
- Cleans up with water

Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants. <250 g/L VOC contents (less H_2O and exempt solvents).

2. Applications

Typical applications include: bottom-of-wall, head-of-wall and wall-to-wall construction joints in non-fire-rated construction. Typical through penetrations include: metallic pipe, non-metallic pipe (excluding CPVC), insulated pipe, conduit, power and communication cables and combinations of multiple penetrants. Ideal for smoke partitions and acoustical assemblies.

3. Specifications

3M™ Smoke and Sound Sealant SS 100 shall be a one-component, ready-to-use, gun-grade, elastomeric sealant. 3M™ Smoke and Sound Sealant SS 100 shall be tested to the criteria of ASTM E 90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements and ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials. 3M™ Smoke and Sound Sealant SS 100 shall meet the requirements of the IBC, IRC, IFC, IPC, IMC, NFPA 5000, NEC (NFPA 70), NFPA 101 and NBCC.

Typically Specified Divisions
Division 7

Section 07 86 00 – Smoke Seals
Section 07 92 19 – Acoustic Joint Sealants
Section 07 27 00 – Air Barriers

Related Sections
Section 07 84 16 – Annular Space Protection
Section 07 87 00 – Smoke Containment Barriers
Section 09 20 00 – Plaster and Gypsum Board
Section 13 48 00 – Sound Vibrations and Seismic Control
Section 21 00 00 – Fire Suppression
Section 22 00 00 – Plumbing
Section 26 00 00 – Electrical

4. Performance & Typical Physical Properties

Colors Available:	White
Extension/compression:	Capability of ±10%
Application Temperature Range:	40° to 122°F (4° to 50°C)
Surface Burning (ASTM E 84)**:**	Flame Spread 5 Smoke Development 5
STC Acoustic Barrier (ASTM E 90 and ASTM E 413)**:**	56 when tested in STC 56 rated wall assembly

Unit Volume: 20 fl. oz. sausage (591.5cc, 36.1 in.^{3}), 28 fl. oz tube (828.1cc, 50.5 in.^{3}), 5 gal. pail (.017m^3, 1039.5 in.^{3})

Hardness (ASTM D 2240 Shore A)**:**	60
Tensile Strength:	175 psi (1.2 MPa)
Volume Shrinkage (ASTM C 1241)**:**	39.5%
VOC Less H_2O and Exempt Solvents:	<250 g/L

Dry: Under typical conditions of 75°F (23°C) and 50% R.H., sealant becomes tack-free in about ten minutes and dry-to-touch in 30 to 60 minutes. Full dry depends upon ambient conditions and volume of sealant. Typical dry rate is approximately 1/8 inch (3mm) per day.

Meets the intent of LEED® VOC environmental quality requirements.

5. Storage & Shelf Life

Storage: 3M™ Smoke and Sound Sealant SS 100 should be stored indoors in dry conditions between 40°F and 90°F (4°C and 32°C). Avoid repeated freeze / thaw exposures of the 3M™ Smoke and Sound SS 100 while still in the packaging.

Shelf Life: 3M™ Smoke and Sound SS 100 shelf life is 18 months in original unopened containers from date of packaging when stored above 68°F (20°C) and below 90°F (32.2°C).
Lot numbering: First to sixth digit = Date of Production (MMDDYY)
Seventh indicator = dash symbol (-) Eighth digit = shift number

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for applicable drawings and details.

Preparatory Work: The surface of the opening and any penetrating items should be cleaned to allow for the proper adhesion of the 3M™ Smoke and Sound Sealant SS 100. Ensure that the surface of the substrates are not wet and are free from dust, debris and frost. Sealant can be installed with a standard caulking gun, pneumatic pumping equipment or it can be easily applied with a putty knife or trowel.

Installation Details: Install the applicable depth of backing material, if required, as detailed within the applicable 3M design. Install the applicable depth of 3M™ Smoke and Sound Sealant SS 100 into the opening flush with the surface of the substrate at the required depth. Please reference 3M™ Smoke and Sound Sealant Installation Guide for further installation details. Tool within 5 minutes. Clean all tools immediately after use with water.

Limitations: Do not apply 3M™ Smoke and Sound Sealant SS 100 when surrounding temperature is less than 40°F (4°C) and in conditions when seals may be exposed to rain or water spray within 18 hours of application. Do not apply 3M™ Smoke and Sound Sealant SS 100 to building materials that bleed oil, plasticizers or solvent (e.g. impregnated wood, oil-based sealants, or green or partially-vulcanized rubber). Do not apply 3M™ Smoke and Sound Sealant SS 100 to wet or frost-coated surfaces or areas that are continuously damp or immersed in water.

NOTICE: This product is not for use as a commercial firestop. This product is not acceptable for use with chlorinated polyvinylchloride (CPVC) pipes.

7. Maintenance

No maintenance is expected when installed in accordance manufacturer's installation guidelines. Once installed, if any section of the 3M™ Smoke and Sound Sealant SS 100 is damaged, the following procedure will apply: remove and reinstall the damaged section in accordance with the applicable 3M™ Smoke and Sound Installation Guide, with a minimum 1/2 in. (12.7mm) overlap onto the adjacent material.

8. Availability

3M™ Smoke and Sound Sealant SS 100 is available in 20.0 oz. sausages, 28.0 fl. oz. cartridges and 4.5 gallon pails. For additional technical and purchasing information regarding this and other 3M™ Fire Protection Products, please call: 1-800-328-1687 or visit www.3M.com/firestop.

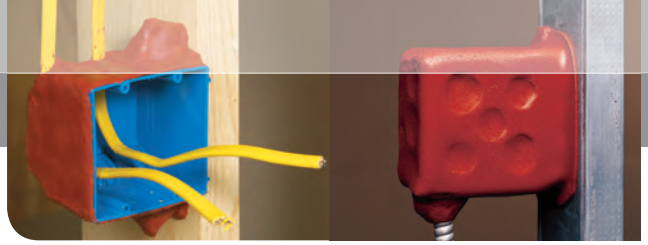
9. Safe Handling Information

Consult product's Material Safety Data Sheet (MSDS) prior to handling and disposal.

Building and Commercial Services Division
3M Center, Building 223-2N-21
St. Paul, MN 55144-1000 USA
1-800-328-1687
www.3M.com/firestop

Please Recycle. Printed in U.S.A.

98-0213-4661-8



3M™ Fire Barrier Moldable Putty Pads MPP+

Product Data Sheet

FIRE BARRIER: UP TO 4 HOUR Fire Protection

SMOKE SEAL: L RATED Meets Optional L Requirements

WALL OPENING: UP TO 2 HOUR Fire Protection

SOUND BARRIER: STC 52 In STC 53-Rated Wall Assembly

FM APPROVED

SUBJECT TO THE CONDITIONS OF APPROVAL AS A WALL & FLOOR PENETRATION FIRESTOP WHEN INSTALLED AS DESCRIBED IN THE CURRENT EDITION OF THE FMRC APROVAL GUIDE

ULC LISTED

FILL, VOID OR CAVITY MATERIALS 90G9

CLASSIFIED UL

WALL OPENING PROTECTIVE MATERIAL FIRE RESISTANCE CLASSIFICATION SEE UL FIRE RESISTANCE DIRECTORY 90G9

CLASSIFIED UL

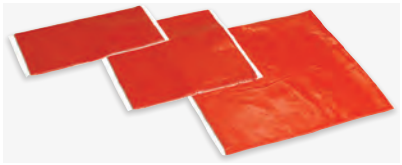
FILL, VOID, OR CAVITY FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS SEE UL FIRE RESISTANCE DIRECTORY 90G9

1. Product Description

3M™ Fire Barrier Moldable Putty Pads MPP+ are a one-part, ready-to-use, intumescent wall-opening protective. When properly applied to the back of electrical outlet boxes, 3M™ Fire Barrier Moldable Putty Pads MPP+ help control the spread of fire, smoke and noxious gases through fire-restive walls and partitions. Installed in accordance with the UL wall-opening protective listing (UL Category CLIV), the product helps achieve up to 2-hour ratings in a variety of wall constructions. 3M™ Fire Barrier Moldable Putty Pads MPP+ can effectively provide protection for back-to-back metallic electrical boxes. in certain configurations.

3M™ Fire Barrier Moldable Putty Pads MPP+ are also used as a firestop material in through-penetration firestop systems. 3M™ Fire Barrier Moldable Putty Pads MPP+ help to maintain a firestop penetration seal for up to 4 hours. 3M™ Fire Barrier Moldable Putty Pads MPP+ exhibit excellent adhesion to a full range of construction substrates and penetrants. The pads are easily molded by hand (no mixing required). In addition to its fire-resistant properties, the 1/10th in. (2.54mm) thick pads have airborne sound reduction characteristics which helps minimize sound transmission through assemblies requiring an STC rating.

Color: Dark Red



4 in. x 8 in. (101.6mm x 203.3mm), 7 in. x 7 in. (177.8mm x 177.8mm) and 9.5 in. x 9.5 in. (241.2mm x 241.3mm) pad sizes available.

Product Features

- Firestop tested up to 4 hours in accordance with ASTM E 814 (UL 1479) & CAN/ULC-S115
- Wall opening protective tested up to 2 hours in accordance with UL 263
- Provides draft and cold smoke seal
- Pliable and conformable—molds easily into required shape
- Helps reduce noise transfer*
- Excellent adhesion
- Re-enterable/repairable
- Halogen-free and solvent-free
- Excellent aging properties
- Low VOC
- Will not dry out or crumble
- Red color widely recognized as a fire protective product

Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants.

**Minimizes noise transfer—STC-Rating of 52 when tested in STC 53-rated wall assembly.*

2. Applications

4 in. x 8 in. (101.6mm x 203mm) 3M™ Fire Barrier Moldable Putty Pads MPP+ are typically used as a wall opening protective to meet building requirements, for protection of membrane penetrations made by listed steel or non-metallic electrical boxes. It is also used to seal gaps between cables in multiple penetrations (including fiber optic inner duct) and to firestop cable bundles, insulated pipe, electrical conduit and metal pipe. Larger sized pads, 7 in. x 7 in. and 9.5 in x 9.5 in. (177.8mm x 177.8mm and 241.2mm x 241.2mm) are widely used to firestop metallic and non-metallic electrical outlet boxes up to 14 in. x 4.5 in. by 2-1/2 in. (355.6mm x 114.3mm x 63.5mm) deep. For larger applications, pads can be molded together by hand.

3. Specifications

3M™ Fire Barrier Moldable Putty Pads MPP+ shall be a one component, ready-to-use, intumescent elastomer capable of expanding a minimum of 3 times at 1000°F. The material shall be thixotropic and shall be applicable to overhead, vertical and horizontal firestops. Under normal conditions, 3M™ Fire Barrier Moldable Putty Pads MPP+ shall be noncorrosive to metal and compatible with synthetic cable jackets. The putty shall be listed by independent test agencies such as UL, Intertek or FM. 3M™ Fire Barrier Moldable Putty Pads MPP+ shall be tested to and pass the criteria of ASTM E 814 (UL 1479) Standard Test Method for Fire Tests of Penetration Firestop Systems and CAN/ULC S115 Standard Method of Fire Tests of Firestop Systems. 3M™ Fire Barrier Moldable Putty Pads MPP+ meets the requirements of the IBC, NFPA 5000, NEC (NFPA 70), NFPA 101 and NCB (Canada) Building Codes.

Typically Specified MasterFormat (2004)

Section 07 84 00 – Firestopping

Related Sections

Section 07 84 16 – Annular Space Protection
Section 07 86 00 – Smoke Seals
Section 07 87 00 – Smoke Containment Barriers
Section 07 27 00 – Thermal and Moisture Protection Firestopping
Section 21 00 00 – Fire Suppression
Section 26 00 00 – Electrical

For technical support relating to 3M™ Fire Protection Products and Systems, call: 1-800-328-1687
For more information on 3M™ Fire Protection Products, visit: www.3M.com/firestop

4. Performance & Typical Physical Properties

Color:	Dark Red
Nominal Density:	10–12 lbs./gal. (1.2–1.45kg/L)
Nominal Thickness:	1/10 in. (2.54mm)
Surface Burning (ASTM E 84)**:**	Flame Spread 0, Smoke Development 0
Heat Expansion:	Begins at 350°F (177°C) Significant at 400°F (204°C) Free Expansion is Nominal 3 times
STC (ASTM E 90 and ASTM E 413)**:** **Tested in STC 53 rated wall assembly**	52 when tested on back-to-back metallic electrical boxes in certain configurations
VOC Less H_2O and Exempt Solvents:	< 250g/L

Dimensions: 4 in. x 8 in. x 1/10 in. (101.6mm x 203.2mm x 2.5mm)
Unit Volume: 2.52 in.^{3} (41.4cm^3)
Unit Weight: 2.7 oz (76g)

Dimensions: 7 in. x 7 in. x 1/10 in. (177.8mm x 177.8mm x 2.5mm)
Unit Volume: 4.63 in.^{3} (76.0cm^3)
Unit Weight: 4.1 oz (116g)

Dimensions: 9.5 in. x 9.5 in. x 1/10 in. (241.3mm x 241.3mm x 2.5mm)
Unit Volume: 6.1 in.^{3} (139.8cm^3)
Unit Weight: 7.6 oz (215g)

5. Packaging, Storage, Shelf Life

Packaging: Corrugated cardboard box with liner between individual pads.

Storage: 3M™ Fire Barrier Moldable Putty Pads MPP+ should be stored indoors in dry conditions.

Shelf Life: 3M™ Fire Barrier Moldable Putty Pads MPP+ shelf life is indefinite in original unopened containers. Product will not dry or crumble in opened containers. Normal stock and stock rotation practices are recommended.

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for Applicable UL, Intertek or other third-party drawings and system details.

Preparatory Work: The surface of the electrical box, or opening and any penetrating items should be cleaned (i.e. free of dust, grease, oil, loose materials, rust or other substances) to allow for the proper adhesion of the 3M™ Fire Barrier Moldable Putty+ Pad. Ensure that the surface of the substrates are not wet and are frost-free.

Installation Details: Electrical boxes must be firestopped under the following conditions: boxes larger than 16 sq. in. (103 sq. cm), if horizontal spacing between boxes is less than 24 in. (609.6mm), when multiple boxes are located in one stud cavity or if the aggregate of all boxes exceeds 100 sq. in. per 100 sq. ft. (645 sq. cm. per 9.29 sq. m) — refer to listed system details and applicable local building code requirements. For electrical box installations, a minimum of 1/10 in. (2.5mm) thick putty application is required. 3M™ Fire Barrier Moldable Putty Pads MPP+ are to be installed to completely cover the exterior of the outlet box (except for the side against the stud). To firestop penetrations, install the applicable depth of backing material (if required), remove the desired amount of putty from the pad, form (if necessary) and install as detailed within the listed system. Make sure that putty is in complete contact with the substrate and penetrating item(s).

Note: Partial pads can be pieced together and the seams between partial pads should overlap a minimum of 1/8 in. with the seams worked with the fingertips to create adhesion at the seam.

Limitations: Over application (i.e., using excessive amount of material) of product to vertical surfaces may cause sagging, follow system details. Product is not impaired by freezing but should be warmed to 32°F (0°C) before applying.

7. Maintenance

No maintenance is expected when installed in accordance with the applicable UL, Intertek, FM or other third-party listed system. Once installed, if any section of the 3M™ Fire Barrier Moldable Putty Pad MPP+ is damaged, the following procedure will apply: remove damaged putty, clean the affected area and install the proper thickness of putty, ensuring it bonds to the substrate and adjacent putty (product from damaged area can be reused if it is free from contaminants). Putty can be molded together at new/existing putty overlap.

8. Availability

3M™ Fire Barrier Moldable Putty Pads MPP+ are available from 3M Authorized Fire Protection Products Distributors and Dealers. 3M™ Fire Barrier Moldable Putty Pads MPP+ are available in the following sizes: (10 pads/pack, 10 packs/case) 4 in. x 8 in. x 1/10 in. (101.6mm x 203.2mm x 2.5mm), (20 pads/case) 7 in. x 7 in. 1/10 in. (177.8mm x 177.8mm x 2.5mm), (20 pads/case) 9.5 in. x 9.5 in. 1/10 in. (241.3mm x 241.3mm x 2.5mm); red-colored firestop material. For additional technical and purchasing information regarding this and other 3M Fire Protection Products, please call: 1-800-328-1687 or visit www.3M.com/firestop.

9. Safe Handling Information

Consult product's Material Safety Data Sheet (MSDS) from country-of-use prior to handling and disposal.

Industrial Adhesives and Tapes Division
3M Center, Building 230-BS-37
St. Paul, MN 55144-1000
800-328-1687
877-369-2923 (Fax)
www.3M.com/firestop

3M™ Smoke and Sound Sealant SS 100

Product Data Sheet

SOUND BARRIER
STC 56
In STC 56-rated Wall Assembly

ELASTOMERIC
±10%
Movement Capability

SMOKE SEAL
L RATED
Meets Air Leakage Requirements

1. Product Description

3M™ Smoke and Sound Sealant SS 100 is an economical, ready to use, gun-grade, elastomeric sealant that dries to form a monolithic flexible seal that helps prevent unwanted noise infiltration and mitigates the spread of smoke and toxic gas during a fire. 3M™ Smoke and Sound Sealant SS 100 is designed to seal construction joints and through penetrations in non-fire-rated wall and floor assemblies, including smoke partitions and acoustic assemblies. In addition, this product acts as a draftstop to prevent unwanted air movement and provides a barrier against dust and other airborne particulates.

A versatile smoke, sound and draftstop sealant that minimizes noise and helps prevent smoke migration with movement capability for dynamic construction joints

Available in: White ☐

Product Features

- Creates an effective barrier to mitigate smoke and toxic gas spread
- Helps minimize sound transfer
- ±10% movement capability
- An effective draftstop
- Re-enterable / repairable
- Sag-resistant formulation
- Excellent adhesion
- Paintable
- Cleans up with water

Meets the intent of LEED® VOC regulations—helps reduce the quantity of indoor air contaminants that may be odorous, irritating and harmful to the comfort and well-being of the installers and occupants. <250 g/L VOC contents (less H_2O and exempt solvents).

2. Applications

Typical applications include: bottom-of-wall, head-of-wall and wall-to-wall construction joints in non-fire-rated construction. Typical through penetrations include: metallic pipe, non-metallic pipe (excluding CPVC), insulated pipe, conduit, power and communication cables and combinations of multiple penetrants. Ideal for smoke partitions and acoustical assemblies.

3. Specifications

3M™ Smoke and Sound Sealant SS 100 shall be a one-component, ready-to-use, gun-grade, elastomeric sealant. 3M™ Smoke and Sound Sealant SS 100 shall be tested to the criteria of ASTM E 90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements and ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials. 3M™ Smoke and Sound Sealant SS 100 shall meet the requirements of the IBC, IRC, IFC, IPC, IMC, NFPA 5000, NEC (NFPA 70), NFPA 101 and NBCC.

Typically Specified Divisions
Division 7

Section 07 86 00 – Smoke Seals
Section 07 92 19 – Acoustic Joint Sealants
Section 07 27 00 – Air Barriers

Related Sections
Section 07 84 16 – Annular Space Protection
Section 07 87 00 – Smoke Containment Barriers
Section 09 20 00 – Plaster and Gypsum Board
Section 13 48 00 – Sound Vibrations and Seismic Control
Section 21 00 00 – Fire Suppression
Section 22 00 00 – Plumbing
Section 26 00 00 – Electrical

4. Performance & Typical Physical Properties

Colors Available:	White
Extension/compression:	Capability of ±10%
Application Temperature Range:	40° to 122°F (4° to 50°C)
Surface Burning (ASTM E 84)**:**	Flame Spread 5 Smoke Development 5
STC Acoustic Barrier (ASTM E 90 and ASTM E 413)**:**	56 when tested in STC 56 rated wall assembly

Unit Volume: 20 fl. oz. sausage (591.5cc, 36.1 in.^{3}), 28 fl. oz tube (828.1cc, 50.5 in.^{3}), 5 gal. pail (.017m^3, 1039.5 in.^{3})

Hardness (ASTM D 2240 Shore A)**:**	60
Tensile Strength:	175 psi (1.2 MPa)
Volume Shrinkage (ASTM C 1241)**:**	39.5%
VOC Less H_2O and Exempt Solvents:	<250 g/L

Dry: Under typical conditions of 75°F (23°C) and 50% R.H., sealant becomes tack-free in about ten minutes and dry-to-touch in 30 to 60 minutes. Full dry depends upon ambient conditions and volume of sealant. Typical dry rate is approximately 1/8 inch (3mm) per day.

Meets the intent of LEED® VOC environmental quality requirements.

5. Storage & Shelf Life

Storage: 3M™ Smoke and Sound Sealant SS 100 should be stored indoors in dry conditions between 40°F and 90°F (4°C and 32°C). Avoid repeated freeze / thaw exposures of the 3M™ Smoke and Sound SS 100 while still in the packaging.

Shelf Life: 3M™ Smoke and Sound SS 100 shelf life is 18 months in original unopened containers from date of packaging when stored above 68°F (20°C) and below 90°F (32.2°C).

Lot numbering: First to sixth digit = Date of Production (MMDDYY)
Seventh indicator = dash symbol (-) Eighth digit = shift number

6. Installation Techniques

Consult a 3M Authorized Fire Protection Products Distributor / Dealer or Sales Representative for applicable drawings and details.

Preparatory Work: The surface of the opening and any penetrating items should be cleaned to allow for the proper adhesion of the 3M™ Smoke and Sound Sealant SS 100. Ensure that the surface of the substrates are not wet and are free from dust, debris and frost. Sealant can be installed with a standard caulking gun, pneumatic pumping equipment or it can be easily applied with a putty knife or trowel.

Installation Details: Install the applicable depth of backing material, if required, as detailed within the applicable 3M design. Install the applicable depth of 3M™ Smoke and Sound Sealant SS 100 into the opening flush with the surface of the substrate at the required depth. Please reference 3M™ Smoke and Sound Sealant Installation Guide for further installation details. Tool within 5 minutes. Clean all tools immediately after use with water.

Limitations: Do not apply 3M™ Smoke and Sound Sealant SS 100 when surrounding temperature is less than 40°F (4°C) and in conditions when seals may be exposed to rain or water spray within 18 hours of application. Do not apply 3M™ Smoke and Sound Sealant SS 100 to building materials that bleed oil, plasticizers or solvent (e.g. impregnated wood, oil-based sealants, or green or partially-vulcanized rubber). Do not apply 3M™ Smoke and Sound Sealant SS 100 to wet or frost-coated surfaces or areas that are continuously damp or immersed in water.

NOTICE: This product is not for use as a commercial firestop. This product is not acceptable for use with chlorinated polyvinylchloride (CPVC) pipes.

7. Maintenance

No maintenance is expected when installed in accordance manufacturer's installation guidelines. Once installed, if any section of the 3M™ Smoke and Sound Sealant SS 100 is damaged, the following procedure will apply: remove and reinstall the damaged section in accordance with the applicable 3M™ Smoke and Sound Installation Guide, with a minimum 1/2 in. (12.7mm) overlap onto the adjacent material.

8. Availability

3M™ Smoke and Sound Sealant SS 100 is available in 20.0 oz. sausages, 28.0 fl. oz. cartridges and 4.5 gallon pails. For additional technical and purchasing information regarding this and other 3M™ Fire Protection Products, please call: 1-800-328-1687 or visit www.3M.com/firestop.

9. Safe Handling Information

Consult product's Material Safety Data Sheet (MSDS) prior to handling and disposal.

3M

Building and Commercial Services Division
3M Center, Building 223-2N-21
St. Paul, MN 55144-1000 USA
1-800-328-1687
www.3M.com/firestop

Please Recycle. Printed in U.S.A.

98-0213-4661-8

SECTION 081100 – METAL DOORS

PART 1 GENERAL

1.01 SUMMARY

This section includes hollow metal door and frame products as shown in the contract documents and approved shop drawing.

1.02 RELATED SECTIONS

087177 – Finish Hardware

092000 - Gypsum Wallboard

099000 – Painting and Coating

1.03 REFERENCES

A. ANSI/NAAMM HMMA 841, Tolerances and Clearances for Commercial Hollow Metal Doors and Frames

B. ANSI/SDI A250.4, Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, and Frame Anchors

C. ANSI/SDI A250.10, Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames

D. ANSI/NFPA 80 , Standard for Fire Doors and Other Opening Protectives

E. ANSI/NFPA 105, Standard for Smoke Door Assemblies and Other Opening Protectives.

F. ANSI/NFPA 252, Standard Methods of Fire Tests of Door Assemblies

G. ANSI/NFPA 257, Standard on Fire Test for Windows and Glass Block Assemblies

H. ANSI/UL 9, Standard for Fire Tests of Window Assemblies

I. ANSI/UL 10B, Standard for Fire Test of Door Assemblies

J. ANSI/UL 10C, Standard for Positive Pressure Fire Tests of Door Assemblies

K. ANSI/UL 1784, Standard for Air Leakage Tests of Door Assemblies

L. ASTM A 653/A 653M, Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc- Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

M. ASTM A 1008/A 1008M, Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High Strength Low-Alloy, and High Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable

N. ASTM A 1011/A 1011M, Standard Specification for Steel, Sheet, and Strip, Hot-Rolled, Carbon, Structural, High Strength Low-Alloy, and High Strength Low-Alloy with Improved Formability and Ultra High Strength

O. ASTM C 143/A 143M, Standard Test Method for Slump of Hydraulic-Cement Concrete

P. CAN/ULC-S104, Standard Method for Fire Tests of Door Assemblies

Q. CAN4/ULC-S106, Standard Method for Fire Tests of Window and Door Assemblies

1,04 QUALITY ASSURANCE

A. Manufacturer's Qualifications

1. Provide evidence of having personnel and plant equipment capable of fabricating hollow metal door and frame product of the types specified.
2. Provide evidence of having a written quality control system in place.

B. Quality Criteria

1. Compliance with Section 1.05 is required for all door and frame product provided under this Section.
2. Fabricate in accordance with the contract documents and approved submittal drawings.
3. Meet product quality standards and fabrication methods set by the Hollow Metal Manufacturers Association, HMMA, a division of the National Association of Architectural Metal Manufacturers, NAAMM.

1,06 SUBMITTALS

A. Submittal Drawings

1. Show dimensioned door and frame product elevations and sections.
2. Show listing of opening descriptions including locations, material thickness, and anchors.
3. Show location and details of openings.
4. Provide manufacturer's recommended installation instructions and procedures.

B. Samples, upon request, provide the following

1. Door: 1 ft. x 1 ft. (305 mm x 305 mm) corner section with hinge preparation showing top and internal construction.
2. Frame: 1 ft. x 1 ft. (305 mm x 305 mm) section showing assembled corner joint at head and jamb. Include hinge reinforcement [and grout guard] in one rabbet. When glazed frame product is specified, apply and install glazing stop as specified in the opposite rabbet. Apply glazing stop to both.
3. head and jamb section to show their intersection.
4. All samples submitted must represent, in all respects, the minimum quality of work to be furnished by the manufacturer. Do not fabricate any work represented by the samples until the samples are approved. Any deviation of fabrication quality compared to the approved samples is cause for rejection of the work.

PART 2 – PRODUCTS

Doors types are per schedule below.

DOOR SCHEDULE

DOOR #	DIMENSIONS			MATERIALS			DETAIL			GLAZING	HARDWARE															TYPE	RATING	NOTES
	WD	HT	THK	DOOR MATERIAL	FRAME MATERIAL	GROUT FILLED	JAMB	HEAD	THRESH		DOOR CLOSER	DROP SEAL	PERIMETER SEALS	METAL THRESHOLD	LEVER MORTISED PASSAGE	LEVER MORTISED PRIVACY	LEVER MORTISED DEAD BOLT	PUSH/PULL PLATE	ASTRAGAL SEAL	BALL BEARING BUTT HINGES	CAM HINGES	FLOOR STOP	KICK PLATE	CARD READER			ALL SOUND SEAL HARDWARE IS FROM ZERO INTERNATIONAL, BRONX NY, (800) 635-5335 or (718) 585-3230 DROP SEALS = ZERO 367A PERIMETER SEALS = 770A METAL THRESHOLD = ZERO 566A
1	3'-0"	7'-0"	2-1/2"	Metal IAC STC-51	Integral Metal		C/402	D/402	D/402	Factory Glazing	X			X		X					X	X	X		A		
2	3'-0"	7'-0"	2-1/2"	Metal IAC STC-51	Integral Metal		A/602	D/602	D/602	Factory Glazing	X			X				X			X	X	X		A		
3	3'-0"	7'-0"	2-1/2"	Metal IAC STC-51	Integral Metal		B/602	E/602	E/602	Factory Glazing	X			X				X			X	X	X		A		
4	2'-6"	7'-0"	1-3/4"	Metal IAC STC-51	Integral Metal		C/602	F/602	F/602	Factory Glazing	X			X				X			X	X	X		B		
5	2'-6"	7'-0"	1-3/4"	Solid Core Wood	Metal	Yes	E/402	F/402	F/402		X	X	X			X				X		X			C		
6	3'-0"	7'-0"	1-3/4"	Hollow Metal	Metal						X						X			X		X			D		
7	6'-0"	7'-0"	1-3/4"	Hollow Metal	Metal						X						X			X		X			E	60 Min	

See product information sheets at the end of this section

2.01 STEEL

A. Used in the fabrication of hollow metal door and frame products shall meet one, or more, of the following requirements

.

1. Cold-rolled steel conforming to ASTM A1008/A 1008M, "Specification for Steel, Sheet, Cold- Rolled, Carbon, Structural, High Strength Low-Alloy and High Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable" and ASTM A 568/A 568M "Standard Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low Alloy, Hot-Rolled and Cold-rolled, General Requirements for."
2. Hot-rolled, pickled and oiled (HRPO) steel conforming to ASTM A 1011/A 1011M, "Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High Strength Low-Alloy and High Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable" and ASTM A 568/A 568M "Standard Specification for Steel, Sheet, Carbon, Structural, and High- Strength, Low Alloy, Hot-Rolled and Cold-rolled, General Requirements for."
3. Zinc-coated steel conforming to ASTM A 653/A 653M, "Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process" and ASTM A 924/A 924M, "Standard Specification for General Requirements for Steel Steet, Metallic Coated by the Hot-dipped Process".

2.02 HOLLOW METAL DOORS

A. Fabricate types, sizes, and construction in accordance with the contract documents and approved submittal drawing meeting the performance requirements of Section 1.05.

1. Face sheet thickness and steel type

a. Interior

i. Face Sheets, steel thickness: [0.032 in. (0.8 mm)], [0.042 in. (1.0 mm)], [0.053 in. (1.3 mm)] or [0.067 in. (1.7 mm)].

ii. Steel Type, [cold-rolled] [hot-rolled] or [zinc coated min A25 (ZF75)].

b. Exterior

i. Face Sheets, steel thickness:[0.042 in. (1.0 mm), [0.053 in. (1.3mm)] or [0.067 in. (1.7 mm)].

ii. Steel Type, zinc-coated, coating designation: [A40 (ZF120)], [A60 (ZF180)], [(G40 (Z120)] or [(G60 (Z180)].

2. Vertical Edges: Bend edges true and straight, and of minimum radius for the thickness of metal used. Edge profile on both vertical edges of doors as follows (unless hardware dictates otherwise)

a. Single acting doors

i. Hinge edge, Beveled - 1/8 in. in 2 in. (3.1 mm in 50.8 mm) or square.

ii. Lock edge, Beveled - 1/8 in. in 2 in. (3.1 mm in 50.8 mm).

iii. Double acting doors, rounded on 2-1/8 in. (54 mm) radius.

3. Vertical Edge Seams: [continuously welded] [intermittently welded] or [continuously interlocking or lock-tab].

See "Welded, Continuously" in ANSI/NAAMM HMMA 801, "Glossary of Terms for Hollow Metal Doors and Frames"

a. Continuously welded, extending the full height of the door. Finished smooth with no visible seam.

b. Intermittently welded, projection, spot or tack weld 6 in. (152 mm) on center maximum spacing. Finished smooth with no visible welds or weld marks on the exposed edge, presenting either a [visible seam] or [seam filled and finished smooth such that it is not visible at both edges].

c. Continuous interlocking or lock-tab, extending full height of the door. Results in a visible seam at both edges of the door.

4. Top and Bottom Edges

a. Interior, close with a flush or inverted steel channel, not less than 0.053 in. (1.3 mm) thick, welded to both face *At openings with transom panel directly above door. Door top to be either flush with applied astragal on bottom of panel or rabbeted to align with bottom of panel.*

b. Exterior locations where scheduled; [provide an additional zinc coated flushing channel] or [provide zinc coated channel, top sealed flush and weep holes in bottom channel to permit the escape of entrapped moisture].

6. Nominal Thickness - 1.75 in. (44 mm)

7. Cores

Refer to Appendix for additional information on the thermal insulating values of door cores.

a. Honeycomb: "kraft" paper hexagonal cells, laminated to both face sheets.

b. Polyisocyanurate: Rigid, pre-formed, closed cell board, conforming to ASTM

C 591 (unfaced) or ASTM C 1289 faced, laminated to both face sheets.

c. Polystyrene: Rigid, extruded, closed cell board, minimum 0.7 pound per cubic foot (11.2 kilograms per cubic foot) density, laminated to both face sheets.

d. Polyurethane: Rigid cellular board laminated to both face sheets or foamed-in-placed, minimum 1.8 pound per cubic foor (29 kilograms per cubic meter) density, containing no urea formaldehyde resins.

e. Steel stiffened: One piece formed steel channel, minimum 0.026 in. (152 mm) thick spaning the full thickness of the interior of the door. Spaced vertically with interior webs not more than 6 in. (152 mm) apart. Channel laminated to both face sheets. Fill voids between stiffeners with fiberglass or mineral rock wool batt-type insulation.

f. Steel stiffened, welded: One piece formed steel channel, minimum 0.026 in. (152 mm) thick spaning the full thickness of the interior of the door. Spaced vertically with the interior webs spaced not more than 6 in. (152 mm) apart. Channel welded to both face sheets maximum 5" (127 mm) on center. Fills spaces between stiffeners with fiberglass or mineral rock wool batt-type insulation.

g. Steel stiffened, welded: Two hat shaped formed steel channels, minimum 0.026 in. (152 mm) thick, together spaning the full thickness of the interior of the door. Spaced vertically not more than 6 in. (152 mm) apart. Channels welded to both face sheets maximum 5" (127 mm) on center. Fills spaces between stiffeners with fiberglass or mineral rock wool batt-type insulation.

h. Temperature Rise Rated (TRR): Internal construction in accordance with the individual's manufacturing listings.

i . Alternate proprietary core: Material engineered and tested to meet the performance and quality requirements of Sections 1.05 and 1.06. Alternate core construction submitted for Architect for approval during submittal process.

8. Glazing Moldings and Stops

a. Where specified or scheduled, provide steel moldings to secure glazing materials furnished and installed in the field by others, in accordance with glazing sizes and thickness shown in the contract documents.

b. Provide fixed glazing molding or integral stops, 0.032 in. (0.81 mm) minimum thickness, as designated on the Architect’s drawings and/or door schedules.

c. Fabricate channel shaped removable glazing stops not less than 0.032 in. (0.8 mm) material thickness, with tight fitting butt or mitered corners, and secure with #6 minimum, corrosion resistant countersunk sheet metal screws.

d. Prepare fire-protection rated product for listed glazing as required in accordance with the manufacturer’s fire rating procedure.

9. Louvers

a. Provide doors with louvers where specified in the contract documents.

b. Louvers for non-fire-protection rated doors; welded inverted V, Y, Z type, face sheet pierced construction or louver inserts.

c. Fabricate welded inverted V, Y, and Z type vanes from 0.042 in. (1.06 mm) minimum thickness steel, matching the type and finish of the door face

sheets.

d. Prepare fire-rated doors for listed, fire door louvers.

e. Provide louvers for exterior doors with insect and/or bird screens where indicated on the contract documents.

2.03 HARDWARE REINFORCEMENTS, PREPARATION AND LOCATIONS

1. Mortise, reinforce, drill, and tap at the factory for templated hardware only; in accordance with the approved hardware schedule and templates provided by the hardware supplier. Anchor hinges, thrust pivots, and pivot reinforced hinges are to be drill and tap by others after installation in the field.

.

2. Mortise and reinforce only for non-templated hardware or as specified by hardware manufacturers template instructions,

3. Reinforce for surface mounted hardware or continuous hinges in accordance with hardware template. Drilling and tapping by others.

4. Steel thickness for hardware reinforcements to be the manufacturer's standard as required to adequately support the door and hardware; but not less than:

   a. Full mortise hinges and pivots: 0.167 in. (4.24 mm), 0.123 in. (3.12 mm) angle or channel shaped type, or full height steel edge channel 0.067 in. (1.7 mm) thick with extruded holes that provide the same number of threads as 0.123 in. (3.1 mm) thick material.

   b. Lock fronts, mortised latching devices and strikes: 0.067 in. (1.7 mm) or 0.053 in. (1.3 mm) unitized reinforcement with extruded tapped holes that provide equivalent number of thread as
   0.067 in. (1.7 mm).

   c. Concealed holders and surface mounted closers: 0.093 in. (2.3 mm).

   d. Internal reinforcements for other surface mounted hardware: 0.053 in. (1.3 mm).

   e. Power operated hardware, at mortised hardware only:

      1. Doors, provide access from hinge edge to device.

      2. Frames, provide grout guards with (1) 7/8" knock-out in each end, (Electrical Grout Guard).

5. Hardware Locations: All dimensions, except the hinge locations, are referenced from the floor as defines in Section 3.03.

   When hollow metal frame products are specified for use with doors to be furnished by others, hardware preparations on the doors are normally governed by the location on the frames.

   A. Hinges:

      a. Top: 5 in. (127 mm) from underside of frame rabbet at door opening to top of hinge.

      b. Bottom: 10 in. (254 mm) from floor to bottom of hinge.

      c. Intermediate: Centered between top and bottom hinges.

d. Dutch doors: 5 in. (127 mm) from underside of frame rabbet at door opening to top of upper hinge; 10 in. (254 mm) from floor to bottom of lower hinge; and 5 in. (127 mm) from split line to top and bottom of lower and upper intermediate hinges, respectively.

B. Locks and latches: 38 in. (965 mm) to centerline of knob or lever shaft.

C. Deadlocks: 46 in. (1168 mm) to centerline of cylinder.

D. Exit hardware: Centerline of cross bar as shown on hardware template or as shown on approved contract documents.

E. Door pulls: 42 in. (1066 mm) to center of grip.

F. Push/pull bars: 42 in. (1066 mm) to centerline of bar.

G. Hospital latch arm pulls: 45 in. (1143 mm) to centerline.

H. Push plates: 46 in. (1168 mm) to centerline of plate.

I. Roller latches: 46 in. (1168 mm) to centerline of latch.

3.01 INSTALLATION

Correct installation is essential to the proper performance of doors and frame products. The requirements for proper installation are given in the following Sections. However, it is important to recognize that installation is not the responsibility of the hollow metal manufacturer. For this reason the requirements for installation should be included in the Section of the specifications where installation work is specified. For additional information regarding installation, see ANSI/NAAMM HMMA 840, "Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames".

A. Installer's qualifications: Perform installation with skilled, experienced and trained personnel whom shall have successful experience in installations of similar size and scope.

1. Prior to installation performing the following:

a. Check the area of floor on which the frame product is to be installed, and within the path of the door swing, for flatness and correct if necessary. Permissible installation tolerance shall not exceed +/- 1/16 in..

b. Check doors and frame product for correct opening number, size, swing, fire rating, material thickness and hardware requirements. If product does not comply with contract documents, do not install and contact the manufacturer.

c. Isolate and protect all interior surfaces of perimeter frame product sections to be installed in masonry or concrete walls from grout and antifreeze agents.

d. Remove temporary spreaders.

e. Refinish any marks caused by spreader removal to match original.

2. During the setting of frame product check and correct as necessary for opening width, opening height, squareness, alignment, twist and plumbness. Maintain installation tolerances within the following limits:

   a. Opening Width - Measured from rabbet to rabbet at top, middle, and bottom of frame + 0.0625 in (1.5 mm), – 0.0313 in (0.8 mm).

   b. Opening Height - Measured vertically between the frame head rabbet and top of floor or bottom of frame minus jamb extension at each jamb and across the head; ± 0.0468 in. (1.2 mm).

   c. Squareness - Measured at rabbet on a line from jamb, perpendicular to frame head; not to exceed 0.0625 in (1.5 mm).

   d. Alignment - Measured at jambs on a horizontal line parallel to the plane of the face; not to exceed 0.0625 in (1.5 mm).

   e. Twist - Measured at opposite face corners of jambs on parallel lines perpendicular to the plane of the door rabbet; not to exceed 0.0625 in (1.5 mm).

   f. Plumbness - Measured at the jambs on a perpendicular line from the head to the floor; not to exceed 0.0625 in (1.5 mm).

4. Grout guards, electrical grout guards, and junction boxes are intended to protect hardware mortises and tapped holes from masonry grout of 4 in. (101 mm) maximum slump consistency which is hand troweled in place. If a lighter consistency grout greater than 4 in. (101 mm) slump when tested in accordance with ASTM C 143/C 143M is to be used, special precautions must be taken in the field by the installer to protect the aforementioned.

5. Frame products are not intended or designed to act as forms for grout or concrete. Take precautions otherwise to ensure that frames are not deformed or damaged by the hydraulic forces that occur during this process.

6. Keep steel surfaces free of grout, tar, and/or other bonding materials or sealers. Promptly clean grout, tar, and/or other bonding materials or sealers off of door and frame products. If the primer is removed, damaged or negatively affected by this process; clean, finished smooth, and treated for maximum paint adhesion. Touch up with a rust inhibitive primer (comparable to and compatible with the shop applied primer and finish paint specified in Section 09 90 00). All touch-up primer and finish paint must be formulated for Direct to Metal (DTM) application.

7. Install labeled fire doors and frame product in accordance with the terms of their listings, ANSI/NFPA 80 or the local Authority Having Jurisdiction.

8. Maintain proper door edge clearances in accordance with Section 3.03, except for special conditions otherwise noted. Where necessary, metal hinge shims, furnished by the installer, are permitted to maintain clearances.

9. Exposed hollow metal surfaces which have been scratched or otherwise marred during installation and/or field welding, shall be promptly cleaned, finished smooth, and treated for maximum paint adhesion. Touch up with a rust inhibitive primer (comparable to and compatible with the shop applied primer and finish paint specified in Section 09 90 00). All touch-up primer and

finish paint must be formulated for Direct to Metal (DTM) application.

10. Install hardware and glazing material in accordance with individual manufacturer's instructions.
11. Finish paint in accordance with Section 09 90 00.

3.02 OPERATING CLEARANCES

A. Ensure that the edge clearance for swinging hollow metal doors provides for the functional operation of the assembly and does not exceed the following:

1. Between door and frame products at head and jambs ..... 0.125 in (3.1 mm) +/- 0.0625 in (1.5
mm)

2. Between edges of pairs of doors..... 0.125 in (3.1 mm) +/- 0.0625 in (1.5 mm)

B. Floor clearance for fire-protection rated swinging hollow metal doors shall not exceed 0.75 in (19.0 mm). Floor clearance shall be provided for the functional operation of all swinging hollow metal doors and shall not be less than 0.125 in (3.1 mm).

END OF SECTION

Data Sheet
Noise-Lock® STC 51 Steel Acoustic Door

iac acoustics

Overview

- Certified performance rating
- Manufactured to standard and custom sizes
- Available as single leaf or double door sets with glazing options
- Cam-lift hinges used to maximize acoustic seal
- Rugged steel construction
- Factory assembled and checked
- Finished in polyester powder coating as standard
- Wood veneer and powder coat finish options available
- Door leaf is 2 ½" thick

Standard Features

- Acoustic Rated
- Easy Access Flat Thresholds

Optional Extras

- Blast Resistance
- RF Shielding
- Fire Rated

Acoustic Rating

STC 51 (dB) to achieve minimum NIC 46 once installed (subject to flanking).
Rw (C; Ctr) 50 (-3 ; -9) dB to achieve minimum R'w 45 dB once installed (subject to flanking).
Certified laboratory performance in single leaf arrangement as follows:

Frequency (Hz)	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000
Noise-Lock® STC 51	24	20	23	28	37	44	47	49	48	50	53	52	53	52	51	51	54	58	59

Overview

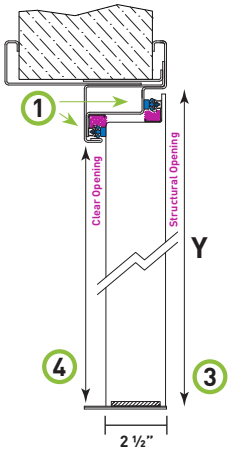
IAC Acoustics produces an engineered system — fully factory assembled complete with a leaf, architectural split-frame, acoustic seals, cam-lift hinges and hardware. All doors are pre-hung for operational alignment, fit and finish before shipping.

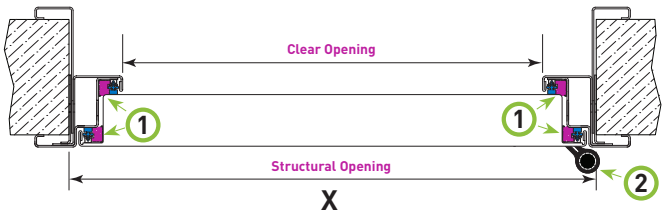
Noise-Lock® doors are laboratory-tested for performance in independent laboratories, further supported by installed site testing. IAC Acoustics is renowned for quality, durability and guarantees in-field performance.

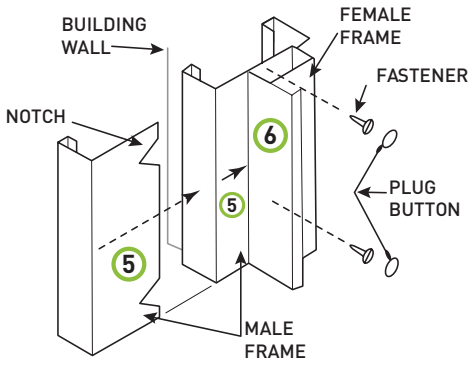
Hardware

IAC Acoustics Noise-Lock® doors are available with a number of standard and custom hardware options. Please contact your local IAC Acoustics office for further details.

1. Acoustic Seal
2. Cam-lift Hinge
3. Boot Seal
4. Sill
5. Male Frame
6. Main Frame / Female Frame







The relationship between the clear and structural openings for both width and height is the same for all sizes of Noise-Lock® STC 51 doors. An example for a 3' x 7' door can be found in the table below:

Door Opening	Width (X)	Height (Y)
Structural/Rough Opening	3'-5½"	7'-3"*
Clear Opening	3'	7'

* includes ¼" threshold

Performance Features

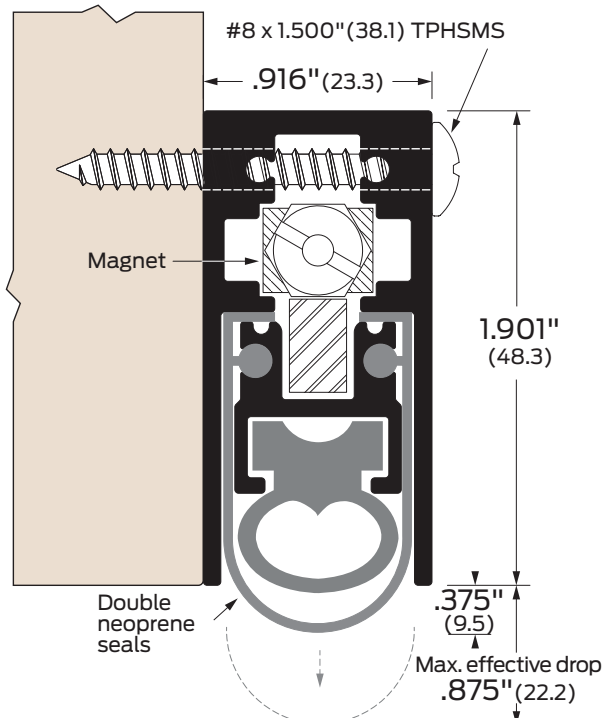
- Self-aligning magnetic seals assure long life and high in-field performance, even under constant use
- Cam-lift hinges lower and seal the door to the floor eliminating the high maintenance of automatic drop seals
- Split frames eliminate in-field grouting to achieve the specified acoustic performance with quick and clean installation

2720 Tobey Drive, Indianapolis, IN 46219
Tel 1-877-671-7011 ▪ Fax 800-851-0000
Zero.Customer.Support@allegion.com
www.zerointernational.com

Part No:	Part description:
367	Automatic door bottom Heavy duty

Notes:	Provided by:	
Customer name:	Job no:	Date:

Image may not be shown to scale



Notes:
Surface-mounted. Supplied with double solid neoprene seal.
Magnet feature only on ADBs 24" and over.

Certifications:

- Fire rated-UL10c
- Sound

ANSI/BHMA:

367AA, 367BK, 367D, 367G R3B3341

BHMA CERTIFIED

Finishes:

AA	Aluminum clear anodized
BK	Aluminum black anodized
D	Aluminum dark bronze anodized
G	Aluminum gold anodized

Options:

PL	Pull out
SEC	Torx security screws
LK	Locking key
NH	No holes

2720 Tobey Drive, Indianapolis, IN 46219
Tel 1-877-671-7011 ▪ Fax 800-851-0000
Zero.Customer.Support@allegion.com
www.zerointernational.com

Part No:	Part description:
770	Adjustable sealing system jamb applied

Notes:

Provided by:

Customer name:

Job no:

Date:

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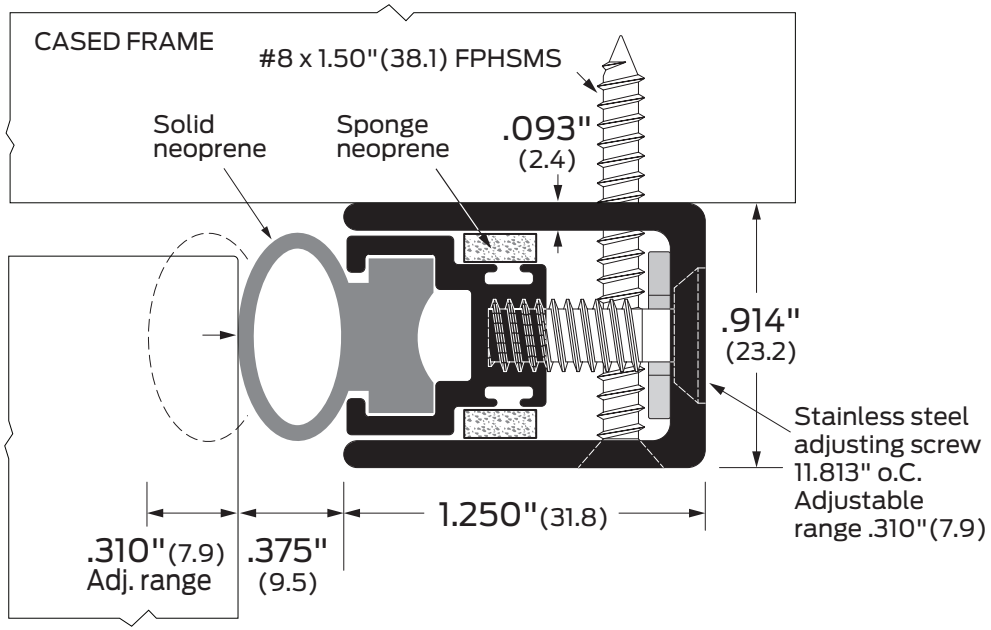


Notes:
This model is supplied with mitered corners.
20 min as a stop. 180 min when applied to stop.

Certifications:

- Fire rated-UL10c
- Smoke and draft control
- Air Infiltration
- Sound

ANSI/BHMA:

770AA, 770BK, 770D, 770G R3B254

BHMA CERTIFIED

Finishes:

AA	Aluminum clear anodized
BK	Aluminum black anodized
D	Aluminum dark bronze anodized
G	Aluminum gold anodized

Options:

S	Order as a set
SEC	Security screws

SECTION 083113 - ACCESS DOORS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the access doors as indicated on the drawings and/or specified herein, including, but not limited to, the following:

1. Frameless recessed panel access doors at drywall ceilings and walls where noted on drawings

1.3 RELATED SECTIONS

A. Drywall - Section 092900.

c. Painting — Section 099113.

1.4 QUALITY ASSURANCE

A. For actual installation of the work of this Section, use only personnel who are thoroughly familiar with the manufacturer's recommended methods of installation and who are completely trained in the skills required.

B. Fire-Resistance Ratings: Wherever a fire-resistance classification is shown, or for construction where access doors are installed, provide required access door assembly with panel door, frame, hinge and latch from manufacturers listed in Underwriters' Laboratories, Inc. "Classified Building Materials Index" for the rating shown.

1. Provide UL label on each access panel.

2. Provide flush, key operated cylinder lock.

C. Size Variations: Obtain Architect's acceptance of manufacturer's standard size units which may vary slightly from sizes shown or scheduled.

1.5 SUBMITTALS

A. Before any materials of this Section are delivered to the job site, submit complete manufacturer's literature to the Architect, including recycle content of material. Submit plans and schedules showing size and location of each and every access door for Architect's acceptance prior to installation.

1.6 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

PART 2 PRODUCTS

2.1 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

A. 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:

1. Acudor Products, Inc.
2. Karp Associates, Inc.
3. Milcor Inc.
4. Nystrom, Inc.
5. Williams Bros. Corporation of America (The).

B. Flush Access Doors and Trimless Frames: Fabricated from steel sheet
See product information sheet at the end of this section.

1. Locations: Wall and ceiling surfaces.
2. Door: Minimum 0.060-inch-thick sheet metal, set flush with surrounding finish surfaces.
3. Frame: Minimum 0.060-inch-thick sheet metal with drywall bead flange.
4. Hinges: Spring-loaded, concealed-pin type.
5. Latch: Cam latch operated by flush key with interior release.

C. Fire-Rated, Insulated, Flush Access Doors and Trimless Frames: Fabricated from steel sheet.

1. Locations: Wall and ceiling surfaces.
2. Fire-Resistance Rating: Not less than that indicated.
3. Temperature Rise Rating: 250 deg F at the end of 30 minutes.
4. Door: Flush panel with a core of mineral-fiber insulation enclosed in sheet metal with a minimum thickness of 0.036 inch.
5. Frame: Minimum 0.060-inch-thick sheet metal with drywall bead.
6. Hinges: Concealed-pin type.
7. Automatic Closer: Spring type.
8. Latch: Self-latching device operated by lush key with interior release.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where access doors are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 COORDINATION

A. Coordinate all work with the mechanical trades to insure proper locations and in a timely manner to permit orderly progress of the total work.

B. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.

c. Adjust hardware and panels after installation for proper operation.

D. Remove and replace panels or frames which are warped, bowed, or otherwise damaged.

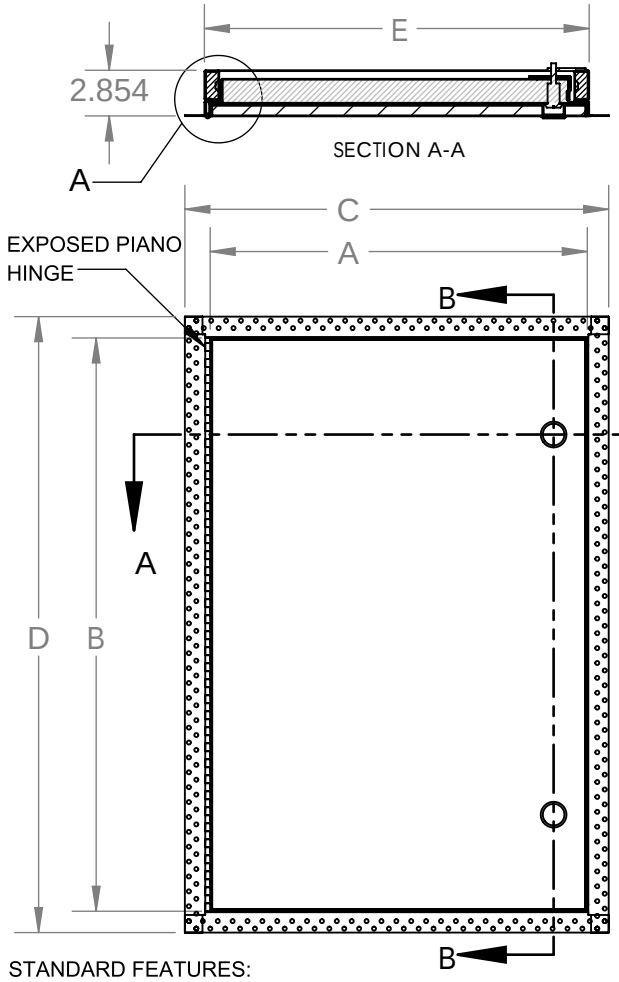
END OF SECTION

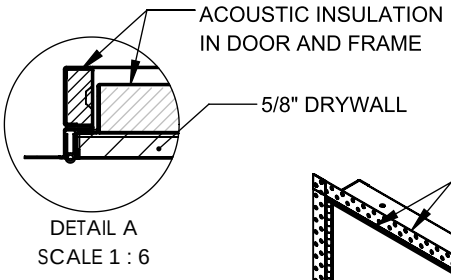
www.acudor.com
U.S.A.: info@acudor.com / 800.722.0501
CANADA: info@acudor.ca / 844.228.3671
INTERNATIONAL: info@acudorintl.com
(905) 428.2240

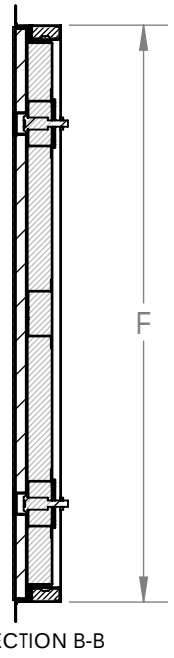
ACD-2064

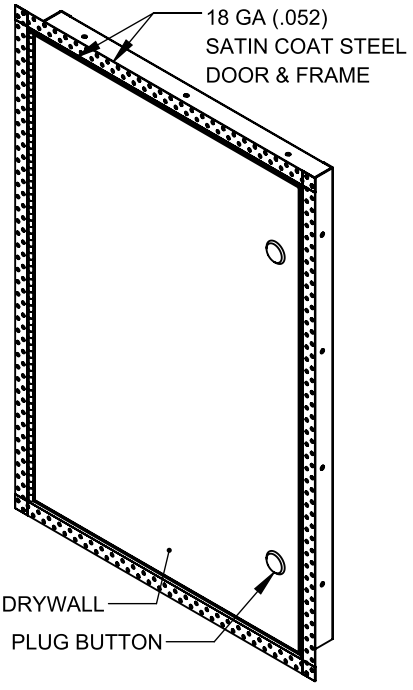
DRYWALL ACOUSTICAL ACCESS DOOR

QTY	NOMINAL SIZE	A	B	C	D	E	F	LOCK QTY
	12 X 12 (305mm X 305mm)	11.567 (294mm)	11.818 (300mm)	14.484 (368mm)	14.484 (368mm)	12.044 (306mm)	12.044 (306mm)	1
	16 X 16 (406mm X 406mm)	15.567 (395mm)	15.818 (402mm)	18.484 (469mm)	18.484 (469mm)	16.044 (408mm)	16.044 (408mm)	1
	18 X 18 (457mm X 457mm)	17.567 (446mm)	17.818 (453mm)	20.484 (520mm)	20.484 (520mm)	18.044 (458mm)	18.044 (458mm)	1
	24 X 24 (610mm X 610mm)	23.567 (599mm)	23.818 (605mm)	26.484 (673mm)	26.484 (673mm)	24.044 (611mm)	24.044 (611mm)	1
	24 X 36 (610mm X 914mm)	23.567 (599mm)	35.818 (910mm)	26.484 (673mm)	38.484 (977mm)	24.044 (611mm)	36.044 (915mm)	2









STANDARD FEATURES:
18GA (.052) SATIN COAT STEEL
MILL FINISH
SLOTTED COMPRESSION LATCH

ACOUSTIC RATING:
TESTED AND EVALUATED TO
ASTM: E90(09), ASTM: E413(16), ASTM: E1332(16)
CERTIFIED TO STC RATING 64 AND OITC RATING 53

OPTIONS:
MATERIAL: ☐ STAINLESS STEEL FINISH: ☐ #4 SATIN BRUSH
LOCK OPTIONS:
☐ HEX ☐ HEX WITH SECURITY PIN ☐ SQUARE ☐ TRIANGLE ☐ LOCKING T-HANDLE

JOB NAME: APPROVED BY:

CUSTOMER: DATE:

ACD-2064

SPECIALTY DOORS

Recessed Acoustical Access Door for Drywall

Highest STC & OITC Rating in the INDUSTRY

Application

This recessed access door is ideal for use on Acoustical drywall walls where maintaining STC (Sound Transmission Class) and OITC (Outdoor-Indoor Transmission Class) is required. The unique taping bead flange allows for a concealed finish.

Product Features

- Zinc coated steel provides superior corrosion resistance
- Drywall taping bead flange
- Recessed door fitted with 5/8" thick drywall, ensures finish similar to surrounding
- Tested and evaluated to ASTM: E90(09), ASTM: E413(16), ASTM: E1332(16) and certified to STC Rating 64 and OITC Rating 53

ACD-2064 Specifications:

Material: 18 Gauge Satin Coat Steel

Door: 18 Gauge recessed design filled with 1½" thick acoustic mineral liner, 0.11" thick mineral filled vinyl barrier and fitted with 5/8" thick drywall as finished face

Frame: 18 Gauge, press bent for strength and rigidity, drywall taping bead flange Insulated with 1" thick acoustical mineral liner

Gasket: Silicone perimeter seal gasket

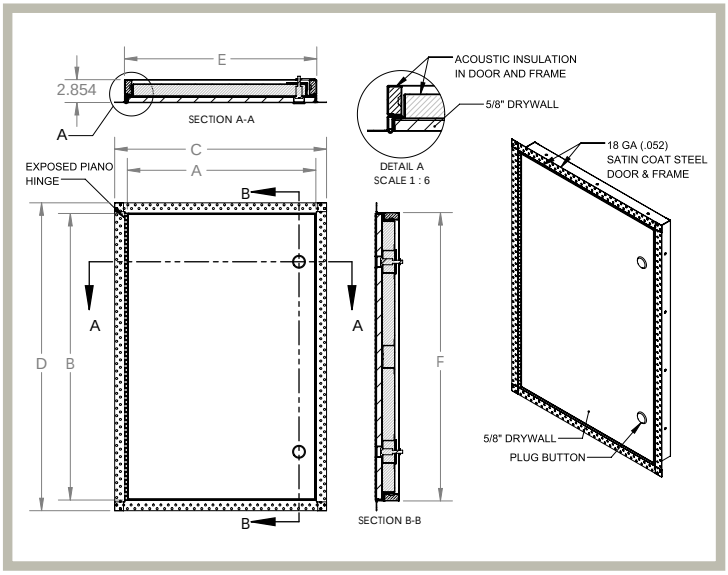
Hinge: Continuous exposed stainless steel piano hinge

Standard Lock: Screw driver operated Compression Latch

Optional Lock: Compression Latch with Hex Head, Hex with security pin, Square, Triangle

Acoustic Rating: This door has been tested and evaluated to ASTM: E90(09), ASTM: E413(16), ASTM: E1332(16) and certified to STC Rating 64 and OITC Rating 53.

Finish: Satin Coat Steel



ACD-2064 STANDARD SIZES

Nominal Door Size W&H			Weight per Door	
Inches	mm	Latches	lbs.	kg.
12 x 12	305 x 305	1	13.2	6
18 x 18	457 x 457	1	24.3	11
24 x 24	610 x 610	1	41.9	19
24 x 36	610 x 914	2	62.0	28

SECTION 087100 — FINISH HARDWARE

PART 1 GENERAL:

1.01 GENERAL REQUIREMENTS:

A. Work of this section, as shown or specified shall be in accordance with the contract documents.

B. All door hardware and associated keying, automated access etc. shall be as specified by SUNY Purchase Facilities Management. Specifications available on request

1.02 WORK INCLUDES:

A. Work of this Section includes all labor, materials, equipment and services necessary to furnish all the finish hardware as shown on the drawings and specified herein.

1.03 RELATED WORK:

A. Painting — Section 099113

1.04 REFFERENCES:

A. American National Standards Institute - ANSI 156.18 - Materials and Finishes.

B. ANSI A117.1 - Specifications for making buildings and facilities usable by physically handicapped people.

C. BHMA - Builders Hardware Manufacturers Association.

D. DHI - Door and Hardware Institute.

E. NFPA - National Fire Protection Association

F. NFPA 80 - Fire Doors and Windows.

G. NFPA 105 - Smoke and Draft Control Door Assemblies.

H. NFPA 252 - Fire Tests of Door Assemblies.

I. UL - Underwriters Laboratories.

J. New York State Building Code

K. SDI - Steel Door Institute.

L. WDI - Wood Door Institute.

M. AWI - Architectural Woodwork Institute.

N. NAAM - National Association of Architectural Metal Manufacturers.

1.05 QUALITY ASSURANCE:

A. Hardware: shall be suitable and adapted for its required use and shall fit its designated location. Should any hardware as shown, specified or required fail to meet the intended requirements or require modification

to suit or fit the designated location, determine the correction or modification necessary and notify the Architect in ample time to avoid delay in the manufacture and delivery of hardware.

B. Fire rated openings: provide hardware complying with NFPA Standard No. 80 requirements of authorities having jurisdiction.

C. Hardware Supplier Qualifications: The Hardware Supplier shall have been regularly engaged in the sale and distribution of Finish Hardware for projects of comparable scope and size for a minimum of five (5) years. The Hardware Supplier shall have an AHC of the Door and Hardware Institute on staff who will be responsible for overseeing the scheduling, detailing, ordering, and coordinating of Finish Hardware, and shall be available for consultation with the Architect, at no additional cost to the Owner, during progress of construction. The Hardware Supplier shall be a direct factory authorized distributor for all Finish Hardware items being furnished in accordance with this Specification.

1.06 SUBMITTALS:

A. Submittals: shall be in accordance with Conditions of the Contract, Division 1, and Specification sections.

B. Hardware submission: Submit hardware schedule in vertical format as illustrated by the "Sequence and Format for Hardware Schedule" pamphlet published by the Door and Hardware Institute. Schedules which do not comply will be returned for correction before checking.

C. Hardware schedule shall clearly indicate architect's hardware set and manufacturer of each item proposed.

D. Hardware Supplier shall provide all product information, wiring diagrams, and electrical data to the Electrical Contractor.

E. Samples: Submit samples as requested by Architect. Do not proceed with installation until samples have been approved. Approved samples may be installed in the work after substantial completion of work.

1.07 PRODUCT HANDLING:

A. Pack finish hardware in manufacturer's containers, complete with trimmings, bolts, screws, washers, etc., as required for application. Each container shall bear a suitable label which shall state the quantity and kind of contents of said container, as well as identifying marks relating to the approved Hardware Schedule and its location in the project.

1. Knobs, handles, pulls and other items of finish hardware with easily damaged finishes shall be individually wrapped before placing in containers and with sufficient sheet cloth or cotton-backed paper which shall be adequately secured all as necessary to protect the finishes.

2. Finish hardware shall be delivered, as directed, to the building site or the factories of the various fabricators of metal or wood work to which such hardware is to be applied. Deliver hardware in the order required and in ample time to permit application at the building, or fabricators' shops, within the time required for the completion of the building.

1.08 JOB CONDITIONS:

A. Field Service: The hardware supplier shall assign a competent representative, acceptable to the Architect, to be at the job site each time a major shipment of finish hardware is received. Such representative shall assist in "checking in" these shipments and shall secure a receipt covering the contents of each shipment. In addition, such representative shall be available for immediate call to the job site when, in the opinion of the Architect, his presence is necessary.

B. Templates: Promptly following approval of the Hardware Schedule by the Architect, furnish and deliver template information, to the fabricators, of items to which finish hardware is to be applied.

1. Such deliveries shall be made in ample time to avoid delays in such work of said fabricators. Provide drawings, schedules and detailed information to other trades as necessary for them to accommodate and prepare their work to receive the finish hardware.

C. Cooperation and Coordination: Prior to the installation of any finish hardware, all parties and trades having responsibility to any of all of the openings for the job, shall meet in a pre-construction meeting, for instruction on the proper installation of finish hardware with the manufacturer's representative.

1. Cooperate and coordinate work with that of other trades supplying materials or performing work in contact with, connecting to, underlying, or overlaying the work of this Section.

2. Provide complete data of requirements for work of this Section to those other trades whose work is affected by or dependent upon the work of this Section.

3. Furnish all items to be built into other work in ample time to avoid delaying the progress of such work.

4. Examine all drawings covering the work of this Section and refer to all other drawings, including mechanical and electrical drawings, which may affect the work of this Section or require coordination by this trade.

D. Existing Conditions: Verify all existing conditions in the field to ensure compatibility with hardware specified in the Hardware Sets herein. Any discrepancies between the existing field conditions and hardware specified shall be brought to the attention of the Architect immediately. Hardware Supplier shall not order any hardware until all discrepancies are rectified and the Architect grants written approval.

PART 2 PRODUCTS:

2.01 GENERAL:

A. Requirements for design, grade, function, finish, size and other distinctive qualities of each type of finish hardware are indicated herein. Products are identified by using appropriate hardware designation numbers.

2.02 MANUFACTURERS:

A. Schlage, Baldwin or equal

B. Provide hardware as indicated in hardware sets. Products other than those listed in the sets may be considered, provided that they are proven to be of equal quality and have equal performance to those products specified. See product description for each type of product for details on performance and quality requirements. The architect reserves the right to review and approve all proposed equivalents.

C. Additional hardware items: Provide hardware items required to complete the Work in accordance with these specifications and manufacturers' instructions, including items inadvertently omitted from this specification. Note these items in submittal for review.

2.03 HANGING MEANS:

A. Hinges:

1. In general, where new hinges are to be provided at existing frames, existing condition must be verified before determining which hinge shall be provided so that new hinges will fit existing frame cut out size

and locations.

2. Doors up to 60" in height shall be furnished with two hinges. Furnish one additional hinge for each 30" of door height or fraction thereafter.

3. Hinges shall be of types, sizes and materials as required to suit door weights thickness and fire ratings.

4. Unless otherwise specified, hinges shall be heavy weight. Doors over 3'-4" in width shall receive 5 x 41a .190 gauge hinges.

5. Hinge sizes shall be detailed so that the least amount of projection shall be visible from the frame.

6. Unless otherwise specified, hinges shall have concealed ball bearings (combination anti-friction or oil impregnated) and five (5) knuckles.

7. All hinges shall have non-rising pins.

8. All keyed reverse bevel doors shall be furnished with non-removable pins.

9. Hinge Series: Ives BB1HW series, see hardware sets for sizes.

B. Continuous Hinges:

1. For interior or exterior doors up to 450lbs, and 4'-0" wide.

2. To be constructed of extruded aluminum 6063-T6 alloy with thermoplastic polyester bearings.

3. Shall meet ANSI/BHMA A156.25.

4. Provide 12-24 x 1/2" steel self tapping screws and #12 x 1 ?2" Flathead Wood Screws, unless otherwise specified.

5. Hinge Series: Ives 112HD or 224HD, as specified in hardware sets.

2.04 MORTISE LOCKSETS AND LATCHSETS:

A. Mortise Locksets:

1. Lock cases to be constructed with a protected leading edge and screw configuration that limits access to operating parts.

2. Lock cases are to be multi-functional that transform into different functions without opening the lock case.

3. Lock components to be manufactured of zinc dichromate plated steel. Manufacturers utilizing plastic parts, spacers and/or bushings are not acceptable.

4. Lock components to incorporate a spring loaded fusible link for Fire/Life Safety. Manufacturers utilizing gravity, fusible link are acceptable.

5. Latchbolts to have a standard 2 */‹" backset with a full */‹" throw.

6. Latchbolts to be non-handed, field reversible without opening the lock case.

7. Latchbolts to be 2-piece anti-friction, manufactured from stainless steel. Solid latchbolts and/or plastic anti-friction devices are not acceptable.

8. Cylinders to be secured by a cast stainless steel, dual retainer. Manufacturers utilizing screws and/or stamped retainers are not acceptable.

9. Manufacturers utilizing an exposed toggle on edge of door as "locked indicator" are not acceptable.

B. Lever Trim:

1. Lever assembly (external) to be one-piece design attached by threaded bushing. Lever assembly (internal) shall be attached by screwless shank. Lever attachment by common tools (allen nuts and/or set screws) are not acceptable.

2. Thru-bolt lever assemblies through the door for positive interlock. Manufacturers utilizing a through the door spindle for attachment are not acceptable.

3. Levers to have independent rotation in both directions.

4. Spring cages are to be incorporated into the lever assemblies.

5. Hub blocking plate to be solid, cast stainless steel. Manufacturers utilizing open hub designs are not acceptable.

6. Spindles to be independent, designed to "break-away" at a maximum of 75psi torque.

C. Thumbturns:

1. Thumbturn and back-plate to be manufactured from castings and comply with ANSI 117 accessibility standard.

D. Deadbolts:

1. Deadbolts to be 1 */‹" total length; have standard 1" throw with a minimum */‹" internal engagement when fully extended.

2. Deadbolts to be constructed of stainless steel, incorporating a security roller pin with a minimum Rc60 rating for surface hardness.

E. Strikes:

1. Strikes to be non-handed and bridged to ensure dead latching. Manufactures utilizing fillers of any kind for deadlatch engagement are not acceptable.

2. Mounting tabs are to be automatic self adjusting, vertically and horizontally for door bevel and strike alignment.

F. Lock Series & Design: Schlage L Series Heavy Duty Mortise Locks, lever trim as specified in hardware sets.

G. Certifications:

1. Provide mortise locksets that comply with ANSI A156.13, Series 1000, Operational Grade 1 and Security Grade 1 with all standard trims.

2. Provide mortise locksets that comply with UL10C and UBC 7-2 positive pressure requirements.

3. Provide mortise locksets that comply with ANSI/ASTM F476-76 Grade 40, UL Listed for locksets utilizing concealed cylinders.

1. Have no exposed rivets or screws on back of device that would be visible through a glass light.

2. Doors greater than 3'0" (915mm) provide long bar exit devices, doors greater than 7'0" (2134mm) supply extension rods for required series.

3. 10 year manufacturer standard warranty.

2.05 CLOSERS:

A. All surface closers shall exceed ANSI A156.4 Grade 1 requirements in all aspects as called for below. All closers shall have certification by an independent testing laboratory of 10,000,000 cycles without failure.

B. Closer cylinders shall be cast iron. Closer pinions shall be dual heat treated. Pinion and piston shall be steel alloy. Piston diameter shall be minimum 1-1/2".

C. Closers shall be barrier free with spring tension adjustable from size 1 to size 5.

D. Closers shall maintain control of the door in all conditions. Closers shall have 3 non critical adjusting valves: latch, main and backcheck. Backcheck shall take affect at 45 (AVB) degrees of opening for parallel arm closers and 70 degrees for regular arm closers. Closers with pressure relief valves are not acceptable.

E. All closers shall have forged main arms. Forearms of parallel arm closers shall be forged. Parallel arm brackets shall be forged. All parallel arm joints shall have bronze bushings with minimum 5/8" diameter pins. Cylinders, arms, brackets and mounting plates shall be powder coated.

F. Provide all plates, brackets and special templates when needed for interface with particular header, door and wall conditions and neighboring hardware. Consult factory for special template ("ST" suffix to closer number) pricing.

G. All closers shall be installed so that closer bodies are positioned on room side of doors to and from corridors. Out-swing doors shall have an extra heavy duty parallel arm (EDA). Parallel arm shall be used on connecting doors between rooms.

H. All exterior closers shall have all weather fluid that does not require seasonal adjustment to control speed of door, and shall exhibit the same viscosity from -30 ° F to +120° F.

I. All closers shall have a powder coated aluminum finish on cylinder, arm and accessories. There shall be a full metal, powder coated cover.

J. Furnish all brackets, drop plates and any other necessary hardware required to insure proper installation.

K. All Closers shall comply with UL 10C requirements for positive pressure testing.

L. All closers shall be of one manufacturer's products. All closers shall be inspected after installation by a factory representative to insure proper adjustment and operation.

M. Closer Series: LCN 2031 series concealed, or 4111 series surface.

2.06 DOOR STOPS:

A. Unless otherwise noted, all door stops shall be wall mounted with concealed fasteners Ives WS407CCV/CVX series. Where wall stops will not function for the application, furnish floor mounted stops Ives FS436/438 series.

2.07 PROTECTION PLATES:

A. All kick plates and mop plates unless otherwise noted shall be 8" high x 2" less door width (LDW), beveled three sides x .050 thick

2.10 FLUSH BOLTS AND COORDINATORS:

A. Manual Flush Bolts: Shall be Ives FB458/FB358 series, furnished with DP2 dustproof strikes for all bottom bolts. Top bolts shall be furnished with proper extensions to allow for easy operation.

B. Self Latching Flush Bolts: Shall be Ives FB51P/FB61P series, furnished with DP2 dustproof strikes for all bottom bolts. Furnish wear plates as required.

C. Automatic Flush Bolts: Shall be Ives FB31P/FB41P series, furnished with DP2 dustproof strikes for all bottom bolts. Furnish wear plates as required.

D. Coordinators: Shall be Ives COR series. Furnish all fillers, mounting brackets, carry bars and special cut outs for use with exit devices, as required. Finish shall be black.

2.11 KEY SYSTEM:

A. All locksets and cylinders shall be keyed into the existing Campus Master Key System for this project. Allow for 100% expansion. For the protection of the Campus, all cylinders shall be keyed at the factor where permanent records shall be established and maintained.

B. Cylinders, permanent and removable cores, and keys to be Campus standard — by Best Access Systems 'Premium Series' (no substitutions allowed). General Contractor to provide and install all construction cores. General Contractor to include furnishing of the final cores in this contract, and SUNY Purchase will order, receive and install these cores.

C. Conduct conference on-site at the Campus to comply with all requirements set forth in project documents and verify Campus requirements. In addition to the Campus, Architect, and Contractor, conference participants shall also include; Hardware Sub-Contractor, Hardware Consultant, and Campus Representatives. Incorporate keying conference decisions, but not limited to, the following:

a) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
b) Preliminary key system schematic diagram.
c) Requirements for key control system.
d) Arrangements for delivery of keys.

D. General Contractor to submit keying schedule to the architect for approval.

E. During construction, all new locksets shall be construction masterkeyed. Provide temporary construction cores. The General Contractor shall receive ten (10) construction masterkeys. Under no circumstance shall the General Contractor receive any permanent building masterkeys or change keys unless authorized by the Campus Representative.

F. All permanent cores and keys shall be requested directly by the Campus to the manufacturer. The General Contractor shall be responsible for all payments to the manufacturer and shall supply the Campus with all necessary information (account number, etc.), in order for the Campus to order final cores and keys.

G. All construction cores will be returned to General Contractor once Campus has received and installed final cores.

H. Standard Lock Cylinders: BHMA A156.5, Grade 1.

1. Cylinders: Manufacturer's standard tumbler type, constructed from stainless steel, complying with the following:

    a. Number of Pins: Seven (7)

    b. Bored-Lock Type: Cylinders with tailpieces to suit locks.

    c. High-Security Grade: BHMA A156.5, Grade 1A, listed and labeled as complying with pick- and drill-resistant testing requirements in UL-437 (SuffixA).

    d. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:

    e. Removable Cores: Core insert, removable by use of a special key; for use only with core manufacturer's cylinder and door hardware.

J. Keying system shall be factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference, and as follows:

    a. Master Key System: Cylinders are operated by a change key and a master key.

    b. Existing System: Re-key Campus' existing master key system into new keying system.

    c. Keyed Alike: Key all cylinders to same change key.

K. All masterkeys shall be identified with a registry number, and shall not be stamped with MASTER or letter M.

L. All keys shall be stamped "DO NOT DUPLICATE".

M. Furnish:

    a. Cylinder Change Key: Three (3) per building.

    b. Master Keys: Two (2) per building.

    c. Key Blanks: Two (2) per door.

N. All keying shall be thoroughly checked with the Campus Representative. Final keying requirements shall be submitted in writing, for final approval by the Campus Representative.

I. Thresholds: shall be extruded aluminum meeting ADA requirements. They shall not exceed ½" in height with a wall thickness of .125" unless specified otherwise. Coordinate templates for any and all hardware, which may require cutouts or slots within the threshold for the proper installation of that hardware.

1. Furnish threshold with non-slip epoxy abrasive bonded within the grooves of the threshold.

2. Thresholds shall extend a minimum of 1" past the exterior face of the door, and have returned closed ends.

3. Set all thresholds in grout, and seal with silicone caulk.

4. Fasten thresholds with expansion shield mounting at masonry sub-straight locations, and wood screws at wood substrate locations.

PART 3 EXECUTION:

3.01 ACCEPTABLE INSTALLERS:

A. Factory trained and certified, and carries a factory-issued card certifying that person as a "Certified Installer".

3.02 PREPARATION:

A. Ensure that walls and frames are square and plumb before hardware installation.

B. The installer shall notify the architect, in writing, of all unacceptable condition that could affect the proper operation of the finish hardware.

C. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.

D. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.

E. Existing frames and doors scheduled to receive new hardware: carefully remove existing hardware and turn over to Owner. Patch and fill wood frames and doors with solid wood stock or dowel material before cutting for new hardware. Do not reuse existing screw holes fill and re-pilot.

3.03 INSTALLATION:

A. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation.

1. Unless otherwise specified, locate all hardware in accordance with the recommended locations for builders hardware for standard doors and frames as published by the Door and Hardware Institute.

2. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

3. Unless otherwise specified or detailed, install thresholds with the bevel in vertical alignment with the outside door face. Notch and closely fit thresholds to frame profile. Set thresholds in full bed of sealant.

4. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.

5. Locate floor stops not more than 4 inches from the wall.

6. Drill pilot holes for fasteners in wood doors and/or frames.

7. Shim doors as required to maintain proper operating clearance between door and frame.

8. Use only fasteners supplied by or approved by the manufacturer for each respective item of hardware.

9. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to Owner items not scheduled for reuse.

10. Where necessary, adjust doors and hardware as required to eliminate binding between strike and latchbolt. Doors should not rattle.

11. nstall door closers on corridor side of lobby doors, room side of corridor doors, and stair side of stairways.

12. Adjust spring power of door closers to insure exterior and fire rated doors will consistently close and latch doors under existing conditions. Adjust all other door closers to insure opening force does not to exceed 5 lbs.

13. Adjust "sweep", "latch", & "back check" valves on all door closers to properly control door through out the opening and closing cycle. Adjust total closing speed as required to comply with all applicable state and local building codes.

14. Deliver to the owner 1 complete set of installation and adjustment instructions, and tools as furnished with the hardware.

3.04 QUALITY ASSURANCE:

A. After installation has been completed, the hardware supplier and manufacturers representative for locksets, door closers, exit devices, and overhead stops shall check the project and verify compliance with installation instructions, adjustment of all hardware items, and proper application according to the approved hardware schedule. Hardware supplier shall submit a list of all hardware that has not been installed correctly.

B. After installation has been completed, the hardware supplier and manufacturers representative shall meet with the owner to explain the functions, uses, adjustment, and maintenance of each item of hardware.

3.05 ADJUSTING AND CLEANING:

A. Adjust and check for proper operation and function. Replace units which cannot be adjusted to operate freely and smoothly.

B. At final completion, and when H.V.A.C. equipment is in operation, installer shall make final adjustments to

and verify proper operation of all door closers and other items of hardware. Lubricate moving parts with type lubrication recommended by the manufacturer.

C. All hardware shall be left clean and in good operation. Hardware found to be disfigured, defective, or inoperative shall be repaired or replaced.

D. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of space or area, return to work during week prior to acceptance or occupancy, and make final check and adjustment of hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors.

3.06 EXTRA STOCK

A. See hardware sets for additional hardware. Additional hardware is to be delivered directly to the owner for maintenance purposes.

B. Extra screws shall be furnished to the contractor for installation purposes. See hardware sets for a detailed listing of extra screws.

C. All extra hardware items, fasteners, and special installation tools are to be turned over to the owner at completion of the project.

3.07 DEMONSTRATION:

A. Demonstrate electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

3.08 PROTECTION:

A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.

B. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

3.09 SCHEDULE OF FINISH HARDWARE:

A. PROVIDE HARDWARE SCHEDULE PER CAMPUS REPRESENTATIVES REQUIREMENTS

SECTION 09 50 00 Acoustical Ceilings

PART 1 - GENERAL

1.1 GENERAL

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

B. Scope of the work includes multiple types of specialty ceilings for acoustic control of sound.

1.2 SECTION INCLUDES

A. Section Includes

A. The Work of this Section includes all labor, materials equipment and services necessary to complete the ceiling system as shown on the drawings and/or specified herein.

1. Ceiling Types C1 through C9 described in the Ceiling Type Schedule.

3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings

B. Related Sections

9. Division 26 - Electrical

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 that 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 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability

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

6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels

7. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

8. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials

9. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material

A. Armstrong Fire Guard Products

10. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint

11. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems

12. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum

13. ASTM E 1264 Classification for Acoustical Ceiling Products

B. International Building Code

C. ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality

D. NFPA 70 National Electrical Code

E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

G. International Code Council-Evaluation Services Report - Seismic Engineer Report

1. ESR 1308 - Armstrong Suspension Systems

H. International Association of Plumbing and Mechanical Officials - Seismic Engineer Report

1.4 SYSTEM DESCRIPTION

Continuous/Wall-to-Wall

1.5 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 that are to be coordinated with, or supported by the ceilings.

D. Acoustical 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.

a. 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.

1.7 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

1. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.

2. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.

3. Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory

B. Acoustical Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the

activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.

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.

1.8 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.

1.9 PROJECT CONDITIONS

A. Space Enclosure:

Standard Ceilings: Do not install interior ceilings until space is enclosed and weatherproof; 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.

1.11 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:

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. Suspension: Ten (10) years from date of substantial completion

3. Ceiling System: Thirty (30) 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 concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.12 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 quality 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

Approved Manufacturers: Kinetics OR Equal

2.2 CEILING TYPE SCHEDULE

Ceiling Type Schedule		
C1	3 Layers Laminations, 7/8" Drywall Furring Channel, 1-1/2" "C" Channel, & Kinetics Gotham Ceiling Isolation Hangers	See A401
C2	Stretched Fabric Wood Framed Acoustic "Cloud" With Cove Light Lip Detail	See A410
C3	Stretched Fabric Wood Framed Acoustic Soffit	See A405
C4	Wood Slat Ceiling Inset Into C3 Wood Framed Acoustic Soffit	See A410
C5	Surface Mounted Omniffusor Style Acoustic Diffuser	See A407
C6	Refinished Wood Frames Salvaged From Existing Studio; New Fabric-Wrapped Panel Inserts & Openings for Recessed Lighting	See A410
C7	Similar to C6 With LED Uplighting Detail	See A410
C8	5/8" Type-X Gypsum Board Ceiling (2 Layers at Sound Lock) on 7/8" Drywall Furring Channel & 1-1/2" "C" Channel	See A402
C9	Armstrong Calla Acoustic Ceiling Tiles in Suspended 2'x2' Square Grid	See A402

See product information sheets at the end of this section.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and 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.

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. Follow manufacturer installation instructions.

B. 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.

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 any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

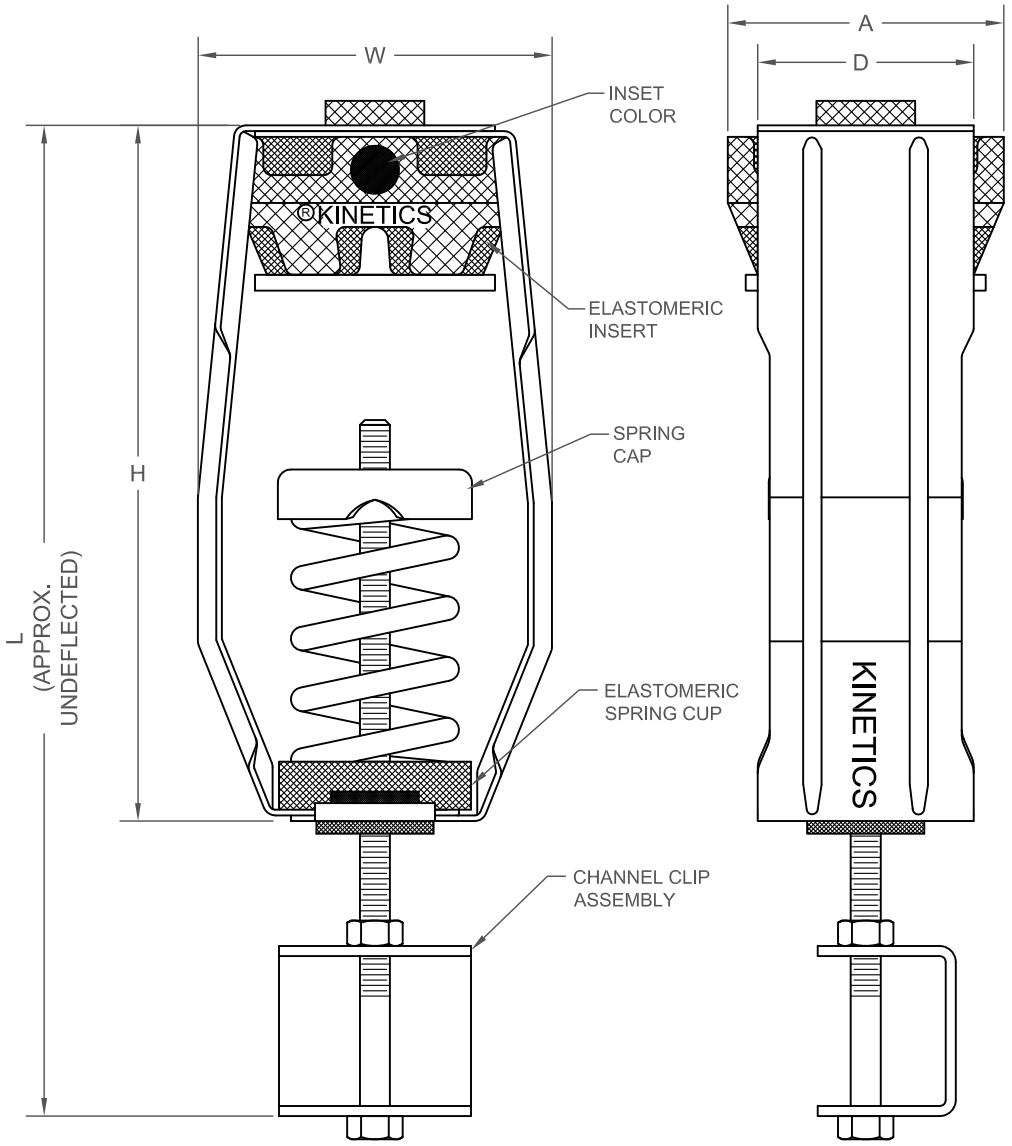
C. Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7876, select option #1 then #8 to review with a consultant the condition and location of building where the ceilings will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant with provide assistance to facilitate the recycle of the ceiling.

GOTHAM 1" DEFLECTION ISOLATION HANGERS

IP UNITS (INCHES AND POUNDS) SI UNITS [MM]

TYPE	L	H	W	A	D
1-12/370	10.32 [262.1]	7.38[187.5]	3.69 [93.7]	2.88 [73.2]	2.25 [57.2]

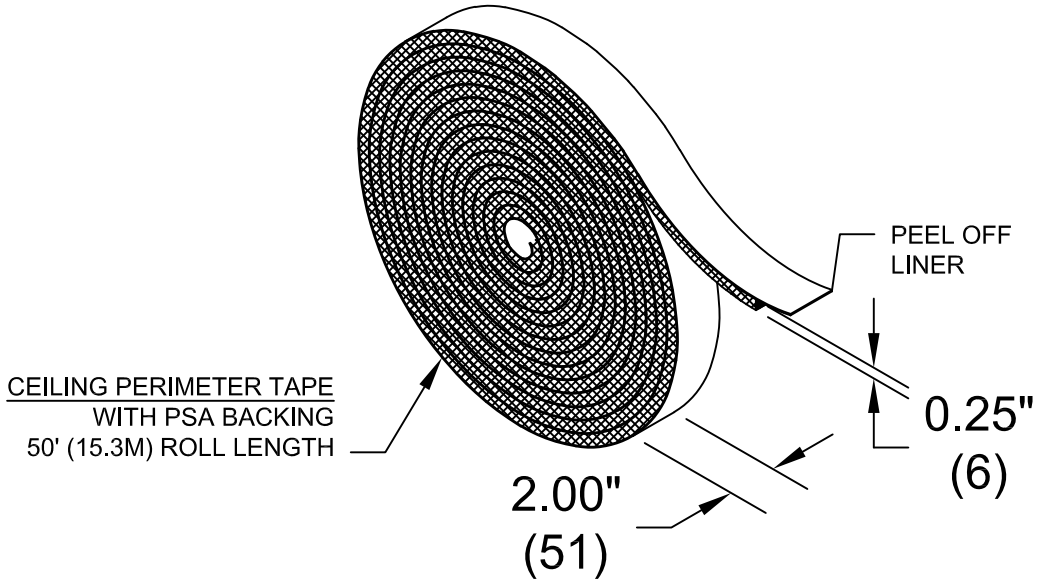
STANDARD RATINGS				SPRING COIL			INSERT
TYPE	SIZE	LOAD	DEFL.	COLOR	FREE HT.	O.D.	COLOR
GOTHAM	1-12	12 [5]	1.00 [25]	SILVER	3.19 [81]	1.75 [44]	BLACK
GOTHAM	1-18	18 [8]	1.00 [25]	YELLOW	3.19 [81]	1.75 [44]	BLACK
GOTHAM	1-24	24 [11]	1.00 [25]	BLUE	3.19 [81]	1.75 [44]	BLACK
GOTHAM	1-30	30 [14]	1.00 [25]	PINK	3.19 [81]	1.75 [44]	BLACK
GOTHAM	1-37	37 [17]	1.00 [25]	WHITE	3.19 [81]	1.75 [44]	BLACK
GOTHAM	1-50	50 [23]	1.00 [25]	GREEN	3.19 [81]	1.75 [44]	BLACK
GOTHAM	1-75	75 [34]	1.00 [25]	BLACK	3.19 [81]	1.75 [44]	BLACK
GOTHAM	1-100	100 [45]	1.00 [25]	GRAY	3.19 [81]	1.75 [44]	BLACK
GOTHAM	1-150	150 [65]	1.00 [25]	RED	3.19 [81]	1.75 [44]	RED
GOTHAM	1-210	210 [95]	1.00 [25]	BROWN	3.19 [81]	1.75 [44]	GREEN



FRONT VIEW **SIDE VIEW**

- ISOLATION HANGERS HAVE A MINIMUM Kx/Ky OF 1.0.
- SPRING ELEMENTS HAVE A TYPICAL OVERLOAD CAPACITY OF 50%.
- SPRING ELEMENTS ARE SAFE FOR SOLID LOADING.
- HANGER BRACKET WILL CARRY (5) TIMES OVERLOAD WITHOUT FAILURE.
- SPRING AND BRACKET ARE POWDER COATED. ALL OTHER STEEL COMPONENTS ARE BRIGHT ZINC PLATED.

SCALE: 6" = 1' - 0"



CPT - CEILING PERIMETER TAPE		
WHITE, 2PCF, CROSS-LINKED, CLOSED CELL, POLYETHYLENE FOAM		
PROPERTY	**VALUE**	**UNIT OF MEASURE**
TENSILE STRENGTH	44	PSI
ELONGATION	150	% TO BREAK
TEAR RESISTANCE	13	LB/IN
COMPRESSION STRENGTH (25% DEFLECTION)	7	PSI
COMPRESSION SET	22	% OF ORIGINAL THICKNESS
THERMAL STABILITY	<6	% OF CHANGE @ 158° FOR 24 HRS
THERMAL CONDUCTIVITY	0.27	BTU/HR/INCH/°F
WORKING TEMPERATURE RANGE	70 - 175	°F
WATER ABSORPTION	<0.06	LB/SQ. FT./°F
FLAMMABILITY (MVSS302)	PASS	

DIMENSION FORMAT: IN (mm)

SCALE: 1'-0" = 1'-0"

CPT-Ceiling Perimeter Tape

General Information: Cross-linked closed-cell polyethylene foam tape (2-pcf) is single-coated with rubber-based pressure sensitive adhesive with high tack and high sheer. Supplied in rolls measuring 1/4-inch thick x 2-inch wide x 50-feet long. Flexible tape is conformable to most smooth or irregular surfaces. Provides good resilient decoupling characteristics at ceiling perimeter. Use resilient, non- hardening caulk where required by code or design.

Physical Properties

Density (pcf) 2.0
Tensile Strength (psi).....44.0
Elongation (% to break) 150
Tear Resistance (lb/in).....13.0
Compression Strength ..... 7.0 (psi) 25% deflection
Flammability (MVSS302) ..... PASS
Optimal Application..... Temp 50°F to 80°F
Functional Temp..... 0°F to 140°F

Application: Thoroughly clean contact surface before use. Once tape has been applied, it cannot be removed and reused. Therefore, position tape carefully, assuring that it is in contact with all surfaces. If tape is misaligned, remove used unit, discard, and repeat application with new unit. Test product for system compatibility as individual application conditions can impact results. Kinetics Noise Control, Inc. does not assume any responsibility or liability for any advice furnished by it, or for the performance or results of any installation or use of the product or any final product into which the product may be incorporated by the purchaser and/or user. The purchaser and/or user should perform its own tests to determine the suitability and fitness of the product for the particular purpose desired in any given situation.

Kinetics Noise Control, Inc., 6300 Irelan Place, Dublin, Ohio, 43017
Telephone: 614-889-0480 | Fax: 614-889-0540
www.kineticsnoise.com | sales@kineticsnoise.com

LEED Analysis

CPT – Ceiling Perimeter Tape

Recycled Content

This product does not contain significant recycled content.

Fabrication Location

This product is manufactured in Dublin, OH 43017.

Material Source

The extraction points for the materials in this product cannot be verified. Assume they are outside of the 500 mile radius.

Kinetics Noise Control, Inc., 6300 Irelan Place, Dublin, Ohio, 43017
Telephone: 614-889-0480 | Fax: 614-889-0540
www.kineticsnoise.com | sales@kineticsnoise.com

SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Tradename: CPT Ceiling Perimeter Tape

Chemical Name: Crosslinked Polyethylene Foam

Chemical Family: Polymeric, Polyethylene Plastic

Vendor: Kinetics Noise Control

Address: 6300 Irelan Pl
Dublin, Ohio 43017

Date Issued: April 27, 2017

24-hr Emergency Phone: 877-457-2695

SECTION 2 - HAZARDS IDENTIFICATION

Emergency Overview

Molten polymer will cause thermal burns to skin. When heating irritating fumes may be produced.

Physical State: Solid

Color: According to product color.

Odor: Faint, mild hydrocarbon odor.

Route of Exposure: Poses no immediate hazard.

Eye Contact: Solids or dusts may cause irritation or scratch the surface of the eye.

Skin Contact: Not irritating. Heated foam can stick to skin, causing thermal burns.

Inhalation: Inhalation of fumes and vapors generated by heating foam may cause soreness or irritation in the nose and throat. Exposure to dust may cause irritation.

Ingestion: Not likely a route of exposure.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

This product is considered to be an article according to 29 CFR, hazardous communication – 1910.1200(b)(6)(v)

SECTION 4 - FIRST AID MEASURES

Eye Contact: Flush with water for 5 minutes. Contact a physician if irritation persists.

Skin Contact: If heated material contacts the skin, immediately quench with cool water. If foam/polymer sticks to the skin, do not peel, seek medical attention. If burn is severe, seek immediate emergency medical attention.

Inhalation: if symptoms are experienced, move to fresh air. Seek medical attention if breathing difficulty persists.

Ingestion: seek medical attention.

SECTION 5 - FIREFIGHTING MEASURES

Flammability Classification: Not classified. Polyethylene foam will burn.

Flash Point: Not applicable.

Auto Ignition Temperature: 650 degree F (343 degree C)

Flammability Limits: Not applicable.

Hazardous Combustion Products: Carbon monoxide, olefinic and parrifinic compounds, trace amounts of organic acids, ketones, aldehydes and alcohols may be formed.

Fire Fighting Methods: Small Fire - Use dry chemical, CO2, water spray
Large Fire - Water spray

PPE: Wear an approved positive pressure self contained breathing apparatus and firefighter turnout gear.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Waste Disposal: Pick up and retain for recycle or disposal.

SECTION 7 - HANDLING AND STORAGE

Keep scrap material off walking surfaces to avoid slipping hazards. Avoid accumulation of dust in enclosed space. Use in well ventilated area. Use good housekeeping procedures during storage, transfer and handling. Store away from heat, ignition sources, and oxidizing agents. Keep container closed to prevent moisture exposure, soiling, and contamination. Foam rolls can be heavy; stacking rolls is not recommended.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Ventilate area to prevent dust accumulation and fumes.
Personal Protection: Eyes – safety glasses
Skin – lab coat or long sleeves
. Inhalation – use appropriate respiratory protection
Other Precautions: Practice good industrial hygiene.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: Not applicable

pH: Not applicable

Vapor Pressure: Not applicable

Viscosity: Not applicable

Specific Gravity: 0.02 to 0.40 (water = 1)

Water Solubility: Insoluble

Melting Point: 104 – 138 degree C (219 – 280 degree F)

Evaporation Rate: Not applicable

SECTION 10 - REACTIVITY

Stability: This product is stable.

Conditions to Avoid: Avoid sparks, open flame, or excessive heat. Avoid contact with oxidizers.

Incompatibility: Material may be softened by hydrocarbons. Reacts with fluorine gas.

SECTION 11 - Toxicological

This product is not considered toxic to human or animals.

SECTION 12 - Ecological

Eco-toxicity is expected to be minimal based on the low water solubility of polymers.

SECTION 13 - Disposal

Use only licensed transporters and permitted facilities for waste disposal. Recycle whenever possible.

SECTION 14 - Transport

No information on transport.

SECTION 15 - Regulatory

No regulatory information.

SECTION 16 – Other Information

NOTICE:

The information contained herein is believed to be complete and accurate. However, it is the user's responsibility to determine the suitability of the information for his or her particular purpose. Kinetics Noise Control, Inc. assumes no additional liability or responsibility resulting from the use of, or reliance on, this information.

CALLA®

Tegular
smooth texture

TOTAL ACOUSTICS®
Sound Absorption (NRC) + Sound Blocking (CAC)

SUSTAIN®
High Performance Sustainable Ceiling Systems

24/7 DEFEND™
Solutions for Healthier, Safer Spaces

CONTAIN CLEAN PROTECT

▲ Calla® Square Tegular panels with Suprafine® 9/16" suspension system

CAD/Revit® drawings at:
armstrongceilings.com/cadrevit

DESIGNFlex®
A New World of Choice for Ceiling Systems

plus capabilities to do more

armstrongceilings.com/capabilities
See more photos at:
armstrongceilings.com/photogallery

Smooth, drywall-like finish with both Sustain® and Total Acoustics® panel performance for flexible spaces; Excellent noise reduction and sound blocking in one product.

KEY SELECTION ATTRIBUTES

- DESIGNFlex® options include shapes, made-to-order sizes, and colors available to ship in 3 weeks
- Get total noise control and floor plan versatility with Total Acoustics® ceiling panels: NRC + CAC = Total Acoustics performance
- Calla® panels are part of the Sustain® portfolio, and meet the most stringent sustainability compliance standards today
- Excellent combination of acoustical performance; NRC up to 0.90, and CAC 35
- new CleanAssure™ family of products – includes disinfectable panels, suspension systems, and trim
- Mold- and mildew-resistant surface
- USDA-Certified Biobased Product – 91%
- Washable, Impact-resistant, Scratch-resistant, Soil-resistant
- Product can be recycled through the Armstrong Ceilings Recycling Program
- Compatible with the TechZone® Ceiling Systems
- Available with factory-cut holes for USAI® trimless downlight fixture integration.
- 30-Year Limited System Warranty against visible sag, mold, and mildew
- 10-Year replacement panel available for item 2824

10-YEAR REPLACEMENT PANEL AVAILABILITY

COLORS

Due to printing limitations, shade may vary from actual product.

White (WH) | Black (BK) | Available in any color!

These colors are pre-qualified to meet Sustain® portfolio requirements.

White (WH) | Shell (SH) | Pale Lemon (LM) | Pecan (PC) | Sky (SK) | Moss (MS) | Stone (SE)

Reef (RE) | Lagoon (LA) | Plum (PM) | Cranberry (CN) | Kiwi (KW) | Tangerine (TG) | Black (BK)

Other made-to-order colors must be evaluated if sustainability criteria is required. Lead time will increase.

DETAILS

(Other Suspension Systems compatible. Refer to listing on next page.)

Calla® Square Tegular

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Armstrong® CEILING & WALL SOLUTIONS

CALLA®

Tegular
smooth texture

USDA CERTIFIED BIOBASED PRODUCT PRODUCT 91%

SUSTAIN® High Performance Sustainable Ceiling Systems

Declare.

GREENGUARD Gold Certified (details below)

LEED® | WELL™ | LBC

UP TO 81% RECYCLED CONTENT

Calculate sustainability with GreenGenie™ armstrongceilings.com/greengenie

energy management · construction waste mgmt · regional materials · design for flexibility · EPD · recyclable/ extended producer resp. · biobased materials · recycled content · sourcing of raw materials · material ingredient reporting · low emitting/ materials · lighting quality · acoustics

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION

Dots represent high level of performance. $$$$

armstrongceilings.com/catdwgs	Susp. Dwg.	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC	+ CAC	=	Total Acoustics[1]	Articulation Class AC	Fire Performance	Light Reflect*	Anti-Mold/ Mildew (Bio-Block)	Sag Resistant (Humi-Guard+)	Certified Low VOC Emissions	CleanAssure™ Disinfectable Panels: Fog	DURABILITY: Wash*	Impact	Scratch*	Soil	Recycle Program	30-Yr Warranty
CALLA® 15/16" Square Tegular	8	**2822**	24 x 24 x 1"	0.85 •	35 •		BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
		2822BK	24 x 24 x 1"	0.85 •	35 •		BEST	170 •	Class A	N/A	•	•	•	•	•	•	•	•	•	•
		2823	24 x 48 x 1"	0.85 •	35 •		BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
		2855	30 x 30 x 1"	0.85 •	35 •		BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
		2858	24 x 60 x 1"	0.85 •	35 •		BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
		2865	24 x 72 x 1"	0.85 •	35 •		BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
Made-to-Order Sizes			1" Thick – 15/16" Square Tegular	N/A	N/A		N/A	N/A	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•

1 Ctn Min FASTSIZE 3 WEEKS order to ship

Width	Length
4" – 11-1/2"	12" – 72"
12" – 30"	4" – 72"
30-1/2" – 48"	4" – 24"

Visit the product page online and see "Configure an Item" to verify capabilities. Questions? email Techline@armstrongceilings.com

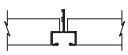
[1] Total Acoustics® ceiling panels have an ideal combination of sound absorption and sound blocking in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)
* Advertised values for light reflectance, wash and scratch resistance are applicable to white tiles only

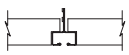
SUSPENSION SYSTEMS

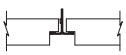
15/16"

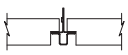

Prelude® XL®

9/16"


Silhouette® XL® 1/4" Reveal


Silhouette XL 1/8" Reveal


Suprafine®


Interlude® XL® HRC

PHYSICAL DATA

Material
Wet-formed mineral fiber with acoustically transparent membrane

Surface Finish
Acoustically transparent membrane with factory-applied latex paint

Fire Performance
ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index of 25 or less. Smoke Developed Index of 50 or less (UL labeled).

ASTM E1264 Classification
Type IV, Form 2, Pattern E; Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

Anti-Mold/Mildew
Ceiling tiles with BioBlock® performance resist the growth of mold and mildew on the tile surface.

VOC Emissions
GREENGUARD Gold Certified
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017. This standard is the guideline for low emissions in LEED®, WELL Building Standard™, Living Building Challenge® (LBC), CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818

GREENGUARD GOLD

Design Consideration
Combining materials with different run dates may result in shade variations. Order attic stock for any anticipated future needs.

Acoustical Performance
CAC testing conducted using Prelude® XL® suspension system for 15/16" edge detail and Silhouette® suspension system for 9/16" edge detail. NRC test conducted using white panels. Painted panels may experience a slight reduction in NRC due to the color painting process.

High Recycled Content
Classified as containing greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines.

Insulation Value
R Factor – 2.9 (BTU units)
R Factor – 0.445 (Watts units)

Cleaning and Disinfecting
Cleaning and CDC recommended disinfecting options available on armstrongceilings.com/cleaning

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com/warranty

Weight; Square Feet/Carton
2822, 2822BK – 1.0 lbs/SF; 40 SF/ctn
2823 – 1.0 lbs/SF; 48 SF/ctn
2855 – 1.0 lbs/SF; 50 SF/ctn
2858 – 1.0 lbs/SF; 80 SF/ctn
2865 – 1.0 lbs/SF; 72 SF/ctn

Minimum Order Quantity
1 carton

TechLine 877 276-7876
armstrongceilings.com/calla

Armstrong® CEILING & WALL SOLUTIONS

MINERAL FIBER – Standard

CALLA®

Tegular
smooth texture

USDA CERTIFIED BIOBASED PRODUCT PRODUCT 91%

SUSTAIN® High Performance Sustainable Ceiling Systems

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energy management · construction waste mgmt · regional materials · design for flexibility · EPD · recyclable/ extended producer resp. · biobased materials · recycled content · sourcing of raw materials · material ingredient reporting · low emitting/ materials · lighting quality · acoustics

▲ LOCATION DEPENDENT

VISUAL SELECTION

PERFORMANCE SELECTION

Dots represent high level of performance. $$$$

armstrongceilings.com/catdwgs	Susp. Dwg.	Item No.	Dimensions (Inches)	UL Classified Acoustics NRC	UL Classified Acoustics CAC	Total Acoustics[1]	Articulation Class	Fire Performance	Light Reflect*	Bio-Block Anti-Mold/ Mildew	Humi-Guard+ Sag Resistant	Humi-Guard+ Certified Low VOC Emissions	CleanAssure™ Disinfectable Panels Fog	DURABILITY Wash*	DURABILITY Impact	DURABILITY Scratch*	DURABILITY Soil	Recycle Program	30-Yr Warranty
CALLA® 9/16" Square Tegular	43, 47, 26, 51, 55	**2824**	24 x 24 x 1"	0.85 •	35 •	BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
		2824BK	24 x 24 x 1"	0.85 •	35 •	BEST	170 •	Class A	N/A	•	•	•	•	•	•	•	•	•	•
		2825	24 x 48 x 1"	0.85 •	35 •	BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
		2856	30 x 30 x 1"	0.85 •	35 •	BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
		2859	24 x 60 x 1"	0.85 •	35 •	BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
		2866	24 x 72 x 1"	0.85 •	35 •	BEST	170 •	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•
Made-to-Order Sizes			1" Thick – 9/16" Square Tegular	N/A	N/A	N/A	N/A	Class A	0.85 •	•	•	•	•	•	•	•	•	•	•

1 Ctn Min FASTSIZE 3 WEEKS order to ship

Width	Length
4" – 11-1/2"	12" – 72"
12" – 30"	4" – 72"
30-1/2" – 48"	4" – 24"

Visit the product page online and see "Configure an Item" to verify capabilities.
Questions? email Techline@armstrongceilings.com

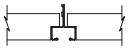
[1] Total Acoustics® ceiling panels have an ideal combination of sound absorption and sound blocking in one product.
GOOD (NRC 0.60-0.65; CAC 35+) **BETTER** (NRC 0.70-0.75; CAC 35+) **BEST** (NRC 0.80+; CAC 35+)
* Advertised values for light reflectance, wash and scratch resistance are applicable to white tiles only

SUSPENSION SYSTEMS

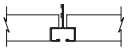
15/16"

Prelude® XL®

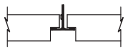
9/16"



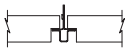
Silhouette® XL® 1/4" Reveal



Silhouette XL 1/8" Reveal



Suprafine®



Interlude® XL® HRC

PHYSICAL DATA

Material
Wet-formed mineral fiber with acoustically transparent membrane

Surface Finish
Acoustically transparent membrane with factory-applied latex paint

Fire Performance
Class A: ASTM E84 and CAN/ULC S102 surface burning characteristics. Flame Spread Index of 25 or less. Smoke Developed Index of 50 or less (UL labeled).

ASTM E1264 Classification
Type IV, Form 2, Pattern E; Fire Class A

Humidity/Sag Resistance
HumiGuard® Plus ceiling panels are recommended for areas subject to high humidity, up to, but not including, standing water and outdoor applications.

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Ceiling tiles with BioBlock® performance resist the growth of mold and mildew on the tile surface.

VOC Emissions
GREENGUARD Gold Certified
Third-party certified compliant with California Department of Public Health CDPH/EHLB/Standard Method Version 1.2, 2017. This standard is the guideline for low emissions in LEED®, WELL Building Standard™, Living Building Challenge® (LBC), CalGreen Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI Green Building Assessment Protocol.

PRODUCT CERTIFIED FOR LOW CHEMICAL EMISSIONS UL.COM/GG UL 2818

GREENGUARD GOLD

Design Consideration
Combining materials with different run dates may result in shade variations. Order attic stock for any anticipated future needs.

Acoustical Performance
CAC testing conducted using Prelude® XL® suspension system for 15/16" edge detail and Silhouette® suspension system for 9/16" edge detail. NRC test conducted using white panels. Painted panels may experience a slight reduction in NRC due to the color painting process.

High Recycled Content
Classified as containing greater than 50% total recycled content. Total recycled content based on product composition of post-consumer and pre-consumer (post-industrial) recycled content per FTC guidelines.

Insulation Value
R Factor – 2.9 (BTU units)
R Factor – 0.445 (Watts units)

Cleaning and Disinfecting
Cleaning and CDC recommended disinfecting options available on armstrongceilings.com/cleaning

30-Year Performance Guarantee & Warranty
When installed with Armstrong® Suspension System. Details at armstrongceilings.com/warranty

Weight; Square Feet/Carton
2824, 2824BK – 1.0 lbs/SF; 40 SF/ctn
2825 – 1.0 lbs/SF; 48 SF/ctn
2856 – 1.0 lbs/SF; 50 SF/ctn
2859 – 1.0 lbs/SF; 80 SF/ctn
2866 – 1.0 lbs/SF; 72 SF/ctn

Minimum Order Quantity
1 carton

MINERAL FIBER – Standard

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BPCS-4722-1020

Armstrong® CEILING & WALL SOLUTIONS

Gotham

1" Deflection Spring Hanger

A full one-inch rated deflection spring hanger approved for construction in the New York City market which doesn't allow the use of wire-tie ceilings.

A neoprene element, one-inch rated spring, and elastomeric cup combine with a unique channel clip assembly to acoustically disconnect two layers of gypsum board. After the weight of gypsum board compresses the spring, an airspace is created between the concrete deck and the isolated ceiling.

Features

- Channel clip assembly integrates cold-rolled-channel grid system
- Built-in ability for leveling gypsum board framing grid
- Single fastener deck installation
- Capacities up to 210 pounds
- A level ceiling is ensured due to Gotham's 10 different spring capacities

KINETICS Noise Control®
kineticsnoise.com
sales@kineticsnoise.com
1-800-959-1229

Gotham Deck-Suspended Ceiling Hanger

Specification

Part 1 – General

1.01 Work Included

A. Furnish all labor, materials, tools and equipment, and perform all operations necessary for the installation of resiliently suspended ceilings shown on contract drawings.

1.02 System Description

A. Resiliently suspended gypsum ceilings, where shown on drawings, shall be isolated from the building structure in order to increase their ability to reduce airborne sound and impact noise transmission.

1.03 Quality Assurance

A. The resilient isolation hangers and perimeter isolation material shall be designed and fabricated at the facilities of a nationally recognized manufacturer having a minimum of five years experience in furnishing similar materials.

1.04 Submittals

A. Shop drawings shall be produced based on the specific project and include hanger location, hanger spring type, loading information, and installation sequencing.

Part 2 – Products

2.01 Materials

A. The sound isolation materials specified herein shall be designed and manufactured by Kinetics Noise Control, Inc. Dublin, Ohio.

B. Ceilings suspended below either concrete and/or metal deck composite construction or structural framing shall be supported by resilient isolation hangers Gotham. Resilient hangers shall have sufficient capacity to sustain continuously applied ceiling weight without settling after initial deflection.

C. The isolation hanger shall be a combination high-deflection steel spring in series with a resilient, molded neoprene noise and vibration

isolation pad. The steel spring and neoprene pad shall be incorporated into a stamped steel hanger assembly that resiliently supports the isolated ceiling.

D. The hanger assembly bracket shall be designed to allow fifteen (15) degrees of vertical alignment of the suspension member without making metal-to-metal contact between the suspension and hanger assembly members. The hanger bracket shall be designed with an integral spring pre-load bracket selected to minimize change in elevation once a load is applied to the hanger and to hold the isolator assembly steady during attachment of gypsum board. The hanger assembly bracket shall consist of a leveling rod with an attached channel carrier designed to accept 1-1/2" x 1/2", 16-gauge cold-rolled steel. The isolation hanger deflection shall be selected by the manufacturer to provide a maximum natural frequency of 4.4 Hz. The steel spring element shall have a minimum Kx to Ky of 1 at its 1" rated deflection.

E. Resiliently suspended ceilings shall be separated where non-isolated building components abut. Isolation material shall be ¼" CPT perimeter isolation board. CPT shall not be penetrated by nail, screw, or similar fastener. CPT shall be adhered to non-isolated structure. Resiliently-suspended ceiling shall be constructed against CPT. CPT shall be sealed using resilient, non-hardening caulk.

Part 3 – Execution

3.01 Installation

A. The installation of all sound isolation materials specified herein, including those installed under other sections of the specifications, shall be in accordance with procedures submitted by the isolation material manufacturer, and approved by the Architect.

B. All building components supported by the isolation hangers shall be free from rigid contact with any part of the non-isolated building structure to prevent unwanted sound flanking.

GOTHAM DECK-SUSPENDED CEILING HANGER

INSTALLATION GUIDELINES

IMPORTANT! PLEASE READ FIRST:

These suggested installation guidelines represent generally accepted procedures for successful installation of Kinetics Noise Control Gotham Deck-Suspended Ceiling Hanger for ceiling system isolation. These suggestions may be followed, modified, or rejected by the owner, engineer, contractor, and/or their respective representative(s) since they, not Kinetics Noise Control, are responsible for planning and executing procedures appropriate to a specific application. Kinetics Noise Control reserves the right to alter these suggestions and encourages contact with the factory or its representatives to review any possible modification to these suggested guidelines prior to commencing installation.

1. Installation of an isolated ceiling system that uses Kinetics Noise Control Gotham Ceiling Hangers requires following materials (as specified by others and purchased separately):

A. 1-1/2" x 1/2", 16-gauge cold-rolled channel.
B. 7/8" 20- to 25-gauge drywall furring channel.
C. Anchors for mounting into non-isolated ceiling substrate (threaded rod if required).
D. 1/2" or 5/8" thick gypsum board (Type X).
E. Appropriate tools and equipment for installation.

Please note: If submittal drawings have been prepared for the installation, review drawings for completeness and accuracy; otherwise, refer to Selection Guidelines for selecting ceiling hangers.

2. Mark grid pattern on existing non-isolated ceiling using the following criteria:

A. Isolators installed at the perimeter must be located not more than 12" from the edge of the isolated ceiling; maintain at least a three-inch clearance from the perimeter.
B. Isolators may be located up to 48" along the perimeter of the isolated ceiling.
C. Isolators mounted mid-room (i.e., those isolators not at the perimeter) may be located up to 48" on center each way (o.c.e.w.); mid-room isolators should be spaced evenly in each direction.

Please note: Submittal drawings, if provided, override general location guidelines provided above.

3. Remove Gotham Hangers from box. Confirm capacity of each isolator to ensure proper location in grid. If provided, shop drawings will identify location of specific hanger by capacity rating. After determining the direction the cold-roll channel will run (orientation is not important acoustically), locate

the isolators or threaded rod at the intersect points on the grid. Anchor isolators to non-isolated ceiling using appropriate fastener through the 3/8" diameter opening at the top of the pre-load spacer and hanger bracket. Slide cold-rolled channel through the channel clip of the leveling bolt. Position the cold-rolled channel to prevent contact at partition/wall/column or any other non-isolated structural component. Inter-connect ends of cold-rolled channel using appropriate practices for ceiling grid installation.

4. Attach drywall furring channel to cold-rolled steel and inter-connect the ends of the furring channel using appropriate practices for ceiling grid installation. Furring channel cannot contact non-isolated structural components.

5. After assembling the ceiling grid, check for levelness. By loosening or tightening the bottom nut of the leveling bolt/channel clip, the grid can be adjusted to level. Do not overly loosen. A minimum 1/4" of threaded rod should be exposed above the threaded spring cap.

6. Install CPT perimeter interface at partitions/walls, columns, and around any non-isolated building components to create a 3/8" wide resilient layer that ensures the isolated ceiling remains decoupled from the non-isolated structure. As the gypsum board is attached to the grid, the springs will compress (1/2" to 1-1/4" nominally depending on spring capacity) allowing the ceiling system to lower into final position. Position the CPT to account for this change to final elevation. Trimming the CPT may be required following installation of the gypsum board. If an alternate method for ensuring that the isolated ceiling remains decoupled is employed (e.g., using resilient backer rod), be sure to maintain a 3/8" gap from non-isolated structural components.

7. Install the gypsum board using accepted practices for attaching to the grid system. Be certain to maintain a 3/8" gap between non-isolated structural components and the isolated ceiling to ensure that the gypsum board does not contact any non-isolated structural components. Do not allow gypsum board to rest on top edge of CPT; it should abut the perimeter isolation board. Do not allow the CPT to become compressed against the non-isolated structure. In some cases, additional adjustment of the gypsum board may be necessary to achieve levelness, consult factory for procedures.

8. Trim CPT as required and caulk gap using a resilient, non-hardening caulk.

SECTON092900.GYPSUMDRYWALL

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the gypsum drywall as shown on the drawings and/or specified herein, including, but not limited to, the following:

1. Gypsum board work for partitions, ceilings, furring, and elsewhere where gypsum drywall work is shown on drawings.
2. Gypsum Ceilings referred to in Ceiling Type Schedule on the drawings.
3. Metal supports for gypsum drywall construction.
4. Acoustical insulation for gypsum drywall work.
5. Acoustical sealant for gypsum drywall work.
6. Concealed metal reinforcing for attachment of items supported on drywall partitions and walls.
7. Taping and finishing of drywall joints.

1.3 RELATED SECTIONS.

A. Access doors - Section 083113.

c. Painting - Section 099000.

1.4 QUALITY ASSURANCE

A. The following standards, as well as other standards which may be referred to in this Section, shall apply to the work of this Section:

1. The Gypsum Construction Handbook, latest edition, USG.
2. ASTM C 645 "Standard Specification for Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels For Screw Application of Gypsum Board."
3. ASTM A 568 "Standard Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements For."
4. ASTM C 1396 "Standard Specification for Gypsum Board."
5. ASTM C 475 "Standard Specification for Joint Treatment Materials For Gypsum Wallboard Construction."
6. ASTM C 645 "Specification for Non-Structural Steel Framing Members."

7. ASTM C 754 “Standard Specification for Installation of Steel Framing Members to Receive Screw Attached Gypsum Panel Products”.

8. ASTM C 840 ”Standard Specification for Application and Finishing of Gypsum Board.”

9. ASTM C 919 "Standard Specification for Use of Sealants in Acoustical Applications."

10. ASTM C 954 "Standard Specification for Steel Drill Screws For the Application of Gypsum Board or Metal Plaster Bases to Steel Studs From 0.033 in. to 0.112 in. in Thickness."

11. ASTM C 1002 ”Standard Specification for Steel Self-Piercing Tapping Screws For the Application of Gypsum Board.”

12. ASTM C 754 "Standard Specification for Installation of Steel Framing Members to Receive Screw Attached Gypsum Board Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs."

13. ASTM D 3273 "Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber."

14. ASTM C 1177 ”Specification for Glass Mat Gypsum Substrate for Use at Sheathing."

15. ASTM C 1178 "Specification for Glass Mat Water Resistant Gypsum Backing Board."

16. ASTM C 1278 ”Specification for Fiber Reinforced Gypsum Panels."

B. Allowable Tolerances: 1/32” offsets between planes of board faces, and 1/16" in 8'-0" for plumb, level, warp and bow.

C. System Design Load

1. Provide drywall wall assemblies designed and tested by manufacturer to withstand a lateral load of 5 lbs. per sq. ft. for the maximum wall height required, and with deflection limited to L/240 of partition height.

a. Drywall assemblies with tile finish shall have a deflection limit of L/360.

2. Provide drywall ceiling assemblies designed, fabricated and installed to have a deflection not to exceed L/360.

D. Fire-Resistance Rating: Where gypsum drywall with fire resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories, or to design designations in UL ”Fire Resistance Directory” or in listing of other testing agencies acceptable to authorities having jurisdiction, and compliant with UL Test #2079; criteria for cycle movement for all field height wall sections requiring allowance for vertical deflection within framing details.

E. Installer: Firm with not less than 5 years of successful experience in the installation of specified materials.

1.5 SUBMITTALS

A. Submit shop drawing for each drywall partition, furring and ceiling system showing size and gauges of framing members, hanger and anchorage devices, wallboard types, insulation, sealant, methods of assembly and fastening, control joints indicating column lines, corner details, joint finishing and relationship of drywall work to adjacent work.

B. Samples: Each material specified herein, 12" x 12", or 12" long, or in manufacturer's container, as applicable for type of material submitted.

C. Manufacturer's Literature: Submit technical and installation instructions for each drywall partition, furring and ceiling system specified herein, and for each fire-rated and sound-rated gypsum board assembly. Submit other data as required to show compliance with these specifications, including data for mold resistant joint compound and data for recycle content of materials.

1.6 PRODUCT HANDLING AND PROTECTION

A. Deliver, store and handle drywall work materials to prevent damage. Deliver materials in their original, unopened containers or bundles, and store where protected from moisture, damage and from exposure to the elements. Store wallboard in flat stacks.

B. Protect wallboard from becoming wet.

1.7 ENVIRONMENTAL CONDITIONS

A. Provide and maintain minimum temperature of fifty-five (55) degrees F. and adequate ventilation to eliminate excessive moisture within the building in the area of the drywall work for at least twenty-four (24) hours, prior to, during and after installation of drywall work. Installation shall not start until windows are glazed and doors are installed, unless openings are temporarily closed. Space above suspended ceilings shall be vented sufficiently to prevent temperature and pressure build up.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers for Gypsum Drywall Panels and Accessories: Materials specified below, unless noted otherwise or specified herein, are those of U.S. Gypsum Co. Equivalent materials of National Gypsum Co., Georgia Pacific and Lafarge meeting specification requirements are acceptable.

B. Acceptable Manufacturers for Metal Supports of Drywall Assemblies: Unless otherwise noted, provide products manufactured by Dietrich Metal Framing, Super Steel Building Products, Marino/Care, Super Steel Studs, Clark Western or approved equal.

2.2 METAL SUPPORTS

A. Recycled Content of Steel Products: Provide products with average recycled content of steel products such that post-consumer recycled content plus one-half of pre-consumer recycled content is not less than 25^{0} .

B. Metal Floor and Ceiling Runners

1. Channel Type: Formed from 20 U.S. Std. gauge (unless otherwise noted) galvanized steel, width to suit channel type metal studs. Use 20 ga. top runners with 1-1/4" minimum flanges.

2. Ceiling runners and head of wall connections at rated partitions shall conform to UL #2079 for cycle movement. Provide positive mechanical connection of framing to structure, allowing for vertical movement within connections. Minimum of 20 ga. galvanized steel for clips, 25 ga. galvanized steel for ceiling runners. Providing a friction free —anti-seizure movement capacity.

a. As manufactured by the Steel Network, VertiClip or VertiTrack or equal made by Metal-Lite Inc.

b. FireTrak (including stud clips) by FireTrak Corp. or equal made by Metal-Lite Inc.

C. Metal Studs, Framing and Furring

1. Channel Type Studs: Channel type with holes for passage of conduit formed from minimum 20 U.S. Std. gauge (unless heavier gauge is required to meet deflection limits) galvanized steel, width as shown on drawings.

2. Furring Channels: Hat shaped, formed from galvanized steel, 25 U.S. Std. gauge.

3. Continuous 16 gauge x 8" wide steel wall plate screwed to studs as required for support of items supported on drywall partitions and walls.

D. Suspended Ceiling and Fascia Supports

1. Main Runners: 1-1/2" steel channels, cold rolled at 0.475 lbs. per ft., rust-inhibitive paint finish.

2. Furring Members: Screw-type hat-shaped furring channels of 25 ga. zinc-coated steel; comply with ASTM C 645.

3. Hangers: Galvanized, 1" x 3/16" flat steel slats capable of supporting 5x calculated load supported.

4. Hanger Anchorages: Provide inserts, clips, bolts, screws and other devices applicable to the required method of structural anchorage for ceiling hangers. Size devices for 5x calculated load supported.

5. Furring Anchorages: 16 ga. galvanized wire ties, manufacturer's standard clips, bolts or screws as recommended by furring manufacturer.

E. All galvanized steel members shall have coating conforming to ASTM A 653, G-60.

2.3 GYPSUM WALLBOARDS

A. Recycled Content: Provide gypsum panel products with recycled content such that post-consumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of 50 percent by weight.

B. Type 1 Gypsum Wall Board: 5/8" thick as indicated on drawings, "Sheetrock," 48" wide, in maximum lengths available to minimize end-to-end butt joints.

1. Wallboard use for ceilings shall be 1/2" thick non-sag drywall.

C. Type 2 Fire Rated Gypsum Wall Board: 5/8" thick as indicated on drawings, "Sheetrock Firecode C," 48" wide, in maximum lengths available to minimize end-to-end butt joints.

D. Type 3 Non-Sag Ceiling Boards: 1/2" thick non-sag Sheetrock, 48" wide in maximum lengths available to minimize end to end butt joints.

E. Type 4 Mold Resistant Paperless Wall Board (at all perimeter walls): 5/8" thick as indicated on drawings, 48" wide "DensArmour Plus" by Georgia Pacific, "Mold Tough" by USG, or approved equal that has a rating of 10 per ASTM D 3273 with core that meets ASTM C 630.

F. Type S Mold Resistant Wall Board: 1/4" thick meeting requirements noted herein for mold resistant wall board.

2.4 ACCESSORIES

A. Acoustic Insulation: Paper-less, non-combustible, semi-rigid mineral fiber mat, 2" thick, in walls (unless otherwise indicated), 3 lb./cu. ft. maximum density; Thermafiber LLC; "Thermafiber," or approved equal.

B. Fasteners for Wall Board: USG Brand Screws; Type S Bugle Head for fastening wallboard to lighter gauge interior metal framing (up to 20 ga.). Type S-12 Bugle Head for fastening wallboard to heavier gauge interior metal framing (20 ga. to 12 ga.); Type S and Type S-12 Pan Head for attaching metal studs to door frames and runners; and Type G Bugle Head for fastening wallboard to wall board. Lengths specified below under "Part 3 - Execution" Articles and as recommended by drywall manufacturer.

a. Laminating Adhesive: "Sheetrock Brand Joint Compound."

D. Joint Treatment Materials for Gypsum Drywall Boards: Paper tape for joint reinforcing; Setting Type (Durabond 90) or Lightweight Setting Type Joint Compound for taping and topping; and Ready Mix Compound for finishing.

1. For mold-resistant drywall, use glass mesh tape with setting joint compound that is rated 10 when tested in accordance with ASTM D 3273 and evaluated in accordance with ASTM D 3274. Acceptable joint compound is "Rapid Set One Pass" made by CTS Cement Manufacturing Corp. or approved equal meeting standards noted herein.

E. Metal Trim: All metal trim shall be fabricated of 6063-T5 extruded aluminum of profiles shown on drawings made by Fry Reglet Co. or equal made by Pittcon or approved equal. Trim shall be shop primed. Metal trim shall include all edge beads and corner beads.

F. Control Joints: No. 0.093, USG.

G. Acoustical Sealant: USG "Acoustical Sealant" or "Tremco Acoustical Caulking" of Tremco Mfg. Co., or approved equal.

H. Neoprene Gaskets: Conform to ASTM D 1056.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where gypsum drywall is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 GENERAL INSTALLATION REQUIREMENTS

A. General

1. Install drywall work in accordance with drywall manufacturer's printed instructions and as indicated on drawings and specified herein.

2. All metal framing for drywall partitions shall extend from floor to underside of structural deck above. Provide for vertical deflection with positive mechanical connections of framing members to structure.

3. Provide concealed reinforcement, 16 ga. thick by eight (8) inches wide or as detailed or as recommended by manufacturer, for attachment of railings, toilet partitions, and other items to be supported on the partitions which cannot be attached to the metal framing members. Concealed

reinforcement shall span between metal studs and be attached thereto using two (2) self-tapping pan head screws at each stud.

a. Back of drywall shall be scored or notched to prevent bulging out where reinforcement plate occurs.

B. Fire-Rated Assemblies: Install fire-rated assemblies in accordance with requirements of authorities having jurisdiction, Underwriters' Laboratories and test results obtained and published by the drywall manufacturer, for the fire-rated drywall assembly types indicated on the drawings.

c. Acoustic Assemblies: Install acoustic rated assemblies to achieve a minimum STC as noted on drawings, in accordance with test results obtained and published by the drywall manufacturer, for the drywall assembly type indicated on the drawings.

D. Sealant

1. Install continuous acoustical sealant bead at top and bottom edges of wallboard where indicated or required for sound rating as wallboard is installed, and between metal trim edge beads and abutting construction.

2. Install acoustical sealant in 1/8" wide vertical control joints within the length of the wall or partitions, and in all other joints, specified below under "Control Joints." Install bead of acoustical sealant around electric switch and outlet boxes, piping, ducts, and around any other penetration in the wallboard; place sealant bead between penetrations and edge of wallboard.

3. Where sealant is exposed to view, protect adjacent surfaces from damage and from sealant material, and tool sealant flush with and in same plane as wallboard surface. Sealant beads shall be 1/4" to 3/8" diameter.

E. Wall Board Application

1. Apply wallboard with long dimension parallel to stud framing members, and with abutting edges occurring over stud flanges.

2. Install wallboard for partitions from floor to underside of structure above and secure rigidly in place by screw attachment, unless otherwise indicated.

3. Provide "Thermafiber" safing insulation meeting standards of Section 078413 at flutes of metal deck where partitions carry up to bottom of metal deck.

4. Neatly cut wallboard to fit around outlets, switch boxes, framed openings, piping, ducts, and other items which penetrate wallboard; fill gaps with acoustic sealant.

5. Screw fasten wallboard with power-driven electric screw driver, screw heads to slightly depress surface of wallboard without cutting paper, screws not closer than 3/8" from ends and edges of wallboard.

6. Where studs are doubled-up, screw fasten wallboard to both studs in a staggered pattern.

F. Metal Trim: Install and mechanically secure in accordance with manufacturer's instructions; and finish with three (3) coats of joint compound, feathered and finish sanded smooth with adjacent wallboard surface, in accordance with manufacturer's instructions.

1. Corner Beads: Install specified corner beads in single lengths at all external corners, unless corner lengths exceed standard stock lengths.

2. Edge Beads: Install specified edge beads in single lengths at all terminating edges of wallboard exposed to view, where edges abut dissimilar materials, where edges would be exposed to view, and elsewhere where shown on drawings. Where indicated on drawings, seal joint between metal edge bead and adjoining surface with specified gasket, 1/8" wide minimum and set back 1/8" from face of wallboard, unless other size and profile indicated on drawings.

3. Casing beads shall be set in long lengths, neatly butted at joints. Provide casing beads at juncture of board and vertical surfaces and at exposed perimeters.

SECTION 098100 - ACOUSTIC INSULATION

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. The Work of this Section includes all labor, materials, equipment, and services necessary to complete the thermal insulation as shown on the drawings and/or specified herein, including, but not limited to, the following:

1. Acoustic Blanket Insulation
2. Acoustic Rigid Insulation
3. Duct Liner

1.3 RELATED SECTIONS

Carpentry

Acoustic Room Components

1.4 SUBMITTALS

A. Submit product data for each type of product indicated.

B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for insulation products.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the site ready for use in the manufacturer's original and unopened containers and packaging, bearing labels as to type and brand. Delivered materials shall be identical to approved samples.

B. Store materials under cover in a dry and clean location, off the ground. Remove materials which are damaged or otherwise not suitable for installation and replace with acceptable materials.

C. Take every precaution to prevent the insulation from becoming wet, cover with tarps or other weather/watertight sheet goods.

PART 2 PRODUCTS

General - Approved products and manufacturers are shown at the end of this section. All products must be approved or equal.

A. BLANNKET INSULATION – Refer to Product Cut Sheets at the end of this Section

B. RIGID INSULATION – Refer to Product Cut Sheets at the end of this Section

C. DUCT LINER – Refer to Product Cut Sheets at the end of this Section

2.3 ACCESSORIES

A. Clips for Securing Insulation to Encountered Surfaces: Spindle anchor and washer type consisting of perforated metal plates with spindle welded to center and snap on washers. Spindle and washers shall receive a corrosion-resistant electro-zinc plating. Adhesives for securing clips in place shall be recommended by the approved clip manufacturer.

1. Acceptable Manufacturers

a. Miracle Adhesives Corp.
b. Stic-Klip Mfg. Co., Inc.
c. Midwest Fasteners

B. Adhesive for Bonding Insulation: The type recommended by the insulation manufacturer and complying with fire-resistance requirements.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where building insulation is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

A. General

1. Cooperate in the coordination and scheduling of the work of this section with the work of other sections so as not to delay job progress.

2. Install insulation in as large components as practical and to cover entire areas indicated on the drawings, closely butted together at sides and ends, and against walls, beams, etc. Neatly fit and cut insulation around all projections such as pipes, conduits, hangers and all other elements encountered in the field, which will result in complete coverage of the scheduled areas.

3. Discard, off the site, insulation which becomes damaged during the course of installation, or is no longer in a physical condition to function for use intended, and replace with new material.

4. Clean surfaces on which adhesives are used to secure the insulation in place of dirt, grime, grease, oil and other foreign materials, to assure that the surfaces are properly prepared to accept the bond of the approved adhesives.

5. Exercise extreme care to avoid damage and soiling of faces on insulation units which will be exposed to view. Align joints accurately, with adjoining surfaces set flush.

6. Tape joints and ruptures in vapor barriers, using tape specified above, and seal each continuous area of insulation to surrounding construction so as to ensure vapor tight installation of the units.
7. Where insulation is impaled on stick clips, provide clips not less than 3" from corners or edges and not more than 12” o.c.
8. Comply with manufacturer's instructions for the particular conditions of installation in each case. If printed instructions are not available or do not apply to the project conditions, consult the manufacturer's technical representative for specific recommendations before proceeding with the work.
9. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.
10. Apply a single layer of insulation to the required thickness, unless a double layer is required, to make up the total thickness shown.

3.3 INSTALLATION OF RIGID INSULATION

A. Install small pads of adhesive spaced approximately 1'-0” o.c. both ways on inside face, as recommended by manufacturer. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Press units firmly against inside wythe of masonry or other construction.

3.4 INSTALLATION OF BLANKET INSULATION

A. Install wall insulation with edges closely butted, with joints square, straight and in alignment (no staggered), and with vapor barrier facing on warm side of building, and with exposed faces flush and in the same plane without warp or twist. Cut and fit insulation to closely fit intersecting or penetrating surfaces. Seal joints between insulation, between insulation and intersecting or penetrating surfaces and between insulation and perimeter surfaces with 4" wide vapor proof aluminum tape applied on the vapor barrier side. Insulation shall be friction fit between furring channels or studs.

B. Where insulation is installed directly below structural deck, fasten to deck using stick clips as specified herein. Space clips 12" o.c. both direction and impale insulation on clips. Insulation shall be installed with vapor barrier facing down. Butt ends and edges of insulation together and tape joints using 4” wide vapor proof aluminum tape over vapor barrier.

3.5 PROTECTION

A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTON 098400 ACOUSTIC ROOM COMPONENTS

1.2 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the Contract Documents.

B. Work of this Section includes all labor, materials, equipment, and services necessary to complete the acoustic finish and treatments as specified in the schedule, on the drawings and/or specified herein, including, but not limited to acoustic treatments called out in the Acoustic and Treatments Schedule.

1.3 RELATED SECTIONS.

A. Carpentry

c. Painting - Section 09900

1.4 SUBMITTALS

A. Submit shop drawing for each type of finish specified, showing size, type of materials of framing and methods of assembly and fastening.

1.5 PRODUCT HANDLING AND PROTECTION

Deliver, store and handle drywall work materials to prevent damage. Deliver materials in their original, unopened containers or bundles, and store where protected from moisture, damage and from exposure to the elements. Store wallboard in flat stacks

PART 2 PRODUCTS

2.1 MANUFACTURERS

Approved Products and Manufacturers are shown in product information sheets at the end of this section. All products shall be approved or equal.

Acoustic Finish Treatment Schedule – Refer to schedule here and in the drawings for assemblies and locations

Acoustic Finish and Treatments Schedule

TREATMENT	DESCRIPTION	DETAIL(S)
T1	Fixed Depth Absorptive Treatment. 2x4 Finish Wall Framing 24"oc. 4" #703 Unfaced Rigid Insulation Friction Fit in Framing Bays. Stretched Fabric on Fabric Track Applied to Framing.	A410/T1
T2	Varying Depth w/ Solar 2 Abffusor. 2x4 Finish Wall Framing 24"oc. Loosely Fill Cavity Behind Framing with 3" Unfaced Batt Insulation. 4" #703 Unfaced Rigid Insulation Friction Fit in Framing Bays. RPG Fabric Covered Abfussor Installed in Finished Framing as Shown. Stretched Fabric on Fabric Track Applied to Framing.	A410/T2
T3	Varying Depth Absorptive Treatment. 2x4 Finish Wall Framing 24"oc. Loosely Fill Cavity Behind Framing with 3" Unfaced Batt Insulation. 4" #703 Unfaced Rigid Insulation Friction Fit in Framing Bays. Stretched Fabric on Fabric Track Applied to Framing.	A410/T3
T4	See T3.	A411/T4
T5	Solar2 QRD & Omniffusor Diffusers. Diffusers Installed in 2x 3/4" MultiLam Plywood Framed Finish. Plywood Finish Around all 4 Sides of Diffractal Units. See Detail for Diffractal Unit Sizing. Plywood Finish Installed in T3 Varying Depth Absorptive Treatment.	A411/T5
T6	See T1.	A411/T6
T7	See T3.	A412/T7
T8	Fixed Depth Absorptive Treatment. 2x4 Finish Wall Framing 24"oc on Flat. 2" #703 Unfaced Rigid Insulation Friction Fit in Framing Bays. Stretched Fabric on Fabric Track Applied to Framing.	A412/T8
T9	Fabric Wrapped Absorber Panel Attached Directly to Partition as Shown.	A412/T9
T10	See T3.	A413/T10
T11	Varying Depth Helmholtz Slat Treatment. 2x4 Finish Wall Framing 24"oc. Loosely Fill Cavity Behind Framing with 3" Unfaced Batt Insulation. 4" #703 Rigid Insulation Friction Fit in Framing Bays. Stretched Fabric Stapled Directly to Finish Framing. Install Solid Wood Slats Directly to Finish Framing as Shown in Detail(s). Run Fabric Horizontally to Conceal Seam Behind Wood Slats. See Detail For Spacing.	A413/T11
T12	See T1.	A413/T12
T13	Acoustic Pyramid Finish.	x
T14	Custom Shelving/Storage Set in T10 Finish.	x
T15	See T14.	x

NOTE: All wall and ceiling surfaces that are not called out for acoustic treatments will be prepared for paint and painted. Paint colors

See product information sheets at the end of this section

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where acoustic finishes are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work

A. Protect wallboard from becoming wet.

1.6 ENVIRONMENTAL CONDITIONS

A. Provide and maintain minimum temperature of fifty-five (55) degrees F. and adequate ventilation to eliminate excessive moisture within the building in the area of the drywall work for at least twenty-four (24) hours, prior to, during and after installation of drywall work. Installation shall not start until windows are glazed and doors are installed, unless openings are temporarily closed. Space above suspended ceilings shall be vented sufficiently to prevent temperature and pressure build up.

PART 3 EXECUTION

3.2 INSPECTION

A. Examine the areas and conditions where gypsum drywall is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.3 GENERAL INSTALLATION REQUIREMENTS

A. General

1. Install work in accordance with manufacturer's printed instructions and as indicated on drawings and specified herein.

2. All metal framing for partitions shall extend from floor to underside of structural deck above. Provide for vertical deflection with positive mechanical connections of framing members to structure.

B. Fire-Rated Assemblies: Install fire-rated assemblies in accordance with requirements of authorities having jurisdiction, Underwriters' Laboratories and test results obtained and published by the drywall manufacturer, for the fire-rated drywall assembly types indicated on the drawings.

c. Acoustic Assemblies: Install acoustic rated assemblies to achieve a minimum STC as noted on drawings, in accordance with test results obtained and published by the drywall manufacturer, for the drywall assembly type indicated on the drawings.

D. Sealant

1. Install continuous acoustical sealant bead at top and bottom edges where indicated or required for sound rating

2. Where sealant is exposed to view, protect adjacent surfaces from damage and from sealant material, and tool sealant flush with and in same plane as wallboard surface. Sealant beads shall be 1/4" to 3/8" diameter.

3. Corner Beads: Install specified corner beads in single lengths at all external corners, unless corner lengths exceed standard stock lengths.

4. Edge Beads: Install specified edge beads in single lengths at all terminating edges of assemblies exposed to view, where edges abut dissimilar materials, where edges would be exposed to view, and elsewhere where shown on drawings.

KINETICS® HardSide
ACOUSTICAL WALL PANELS

A combination of great appearance, superior acoustical performance, and design flexibility makes HardSide Acoustical Wall Panels the perfect solution for many interior reverberant noise problems.

HardSide is a traditional acoustical wall panel offering design versatility. A variety of shaped edges and panel thicknesses allow you to design for the desired appearance and acoustics. The perfect solution for many reverberant noise problems, HardSide delivers superior performance.

The core of this panel is a 6-7 PCF fiberglass board. The edges are chemically hardened for durability. Fabric facing, from the FR-701 collection from Guilford of Maine or factory-approved, customer-selected fabric, is stretched over the panel, wrapped and bonded around the edges for a crisp, finished look. Vinyl finishes are also available.

Design for panel sizes up to a maximum 4 ft. x 10 ft. or custom shaped panels with angled or contoured perimeter cuts.

KINETICS Noise Control

HardSide - Acoustical Wall Panels

DESCRIPTION

A versatile fiberglass acoustical wall panel wrapped in a wide selection of fabrics or vinyls.
Available with hardened shaped edges.
Engineered sound control with thicknesses from 1 to 4 inches and sizes up to 4 ft. x 10 ft.
5 ft. x 10ft. option available with 66-inch wide fabric.

COMPOSITION

6-7 PCF density fiberglass core
Chemically hardened edges
Wrapped in fabric from Guilford of Maine, or factory-approved customer-selected material

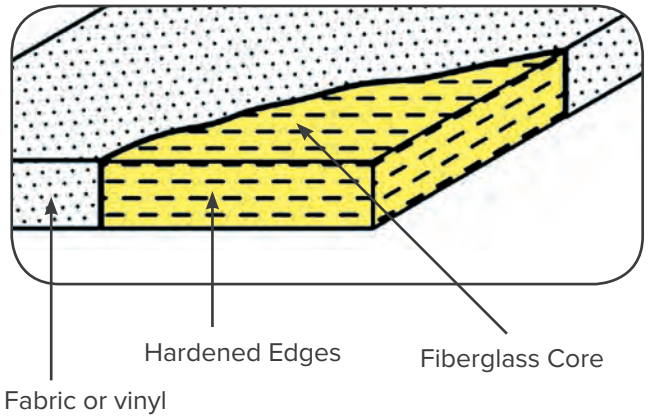
FIRE TEST DATA

Class A per ASTM E84

ACOUSTICAL PERFORMANCE

Sound Absorption per ASTM C-423. Type A Mounting

Frequency, (Hz)	125	250	500	1000	2000	4000	NRC
1" Thick	0.05	0.32	0.82	1.04	1.02	1.01	0.80
2" Thick	0.29	0.82	1.10	1.04	1.01	1.01	1.00
3" Thick	0.90	1.03	1.06	1.01	0.98	0.97	1.00
4" Thick	1.02	1.11	1.03	1.01	1.03	1.03	1.05



APPLICATIONS

- Interior surfaces where superior acoustical performance is required.
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- Schools/Classrooms
- Auditoriums
- Media Rooms
- Multi-Purpose Rooms
- Churches
- Office Spaces
- Reception Areas
- Home Theaters
- Pro Theaters

MOUNTING

HardSide Impaling Clips with Adhesive
Rotofast Clips for ceilings
Z-Clips - movable
Velcro - movable
See HardSide cloud panels for ceiling suspension

EDGE OPTIONS

Square

Bevel

Radius

Pencil

KINETICS Noise Control

kineticsnoise.com
sales@kineticsnoise.com
1-800-959-1229

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LABORATORY AND TESTING SERVICE
P.O. Box 2789, Reston, Virginia 20195 U.S.A. 1825 Michael Faraday Drive, Reston, Virginia 20190 703-435-2900 FAX 703-435-2537

Report On

Surface Burning Characteristics

Determined By

ASTM E 84 Twenty-Five Foot

Tunnel Furnace Test Method

PREPARED FOR:

Novawall Systems, Inc.

Alexandria, Virginia

TEST NUMBER T-10891

MATERIAL TESTED:

1" (25mm) Novawall® Square Track Panels
Stapled to 1/2" Gypsum Wallboard

DATE OF ISSUE 01/18/2002

I. SCOPE

This report contains the reference to the test method, purpose, test procedure, rounding procedures, preparation and conditioning of specimens, description of materials, test and post test observation data, and test results.

II. TEST METHOD

The test was conducted in accordance with ASTM E 84, "Standard Test Method for Surface Burning Characteristics of Building Materials." The 25-foot tunnel method is also described by NFPA 255 and UL 723.

III. PURPOSE

The purpose of the test is to determine the relative performance of the test material under standardized fire exposure. Results are given for Flame Spread and Smoke Developed Index. The values obtained from burning the test material represent a comparison with that of 1/4" inorganic reinforced cement board expressed as zero and red oak flooring expressed as 100.

The flame spread results of 25-foot tunnel tests are frequently used by building code officials and regulatory agencies in the acceptance of interior finish material for various applications. The most widely accepted classification system is epitomized by the National Fire Protection Association Life Safety Code, NFPA 101:

Class A*	0 - 25	flame spread	0-450 smoke developed
Class B*	26 - 75	flame spread	0-450 smoke developed
Class C*	76 - 200	flame spread	0-450 smoke developed

*Class A, B and C correspond to I, II and III, respectively, in other codes such as UBC and BOCA.

This flame spread classification system is based on the premise that the higher the flame spread numbers, the greater the fire spread potential. The actual relationship between the numbers developed under this test and life safety from fire has not been adequately established.

IV. TEST PROCEDURE NOTES

The furnace was preheated to a minimum of 150°F as measured by an 18 AWG thermocouple embedded in cement 1/8" below the floor surface of the chamber, 23-1/4' from the centerline of the ignition burners. The furnace was then cooled to 105°F ($\pm$ 5°F) as measured by a thermocouple embedded 1/8" below the floor surface of the test chamber 13' from the fire end.

Prior 10-minute tests with 1/4" inorganic reinforced cement board provided the zero reference for flame spread. Periodic 10-minute tests with unfinished select grade red oak flooring provided for the 100 reference for flame spread and smoke developed as noted in Section III.

A. Flame Spread

The flame spread distance is observed and recorded at least every 15 seconds or every 2 feet of progression. The peak distance is noted at the time of occurrence. The flame spread distance is plotted over time. The total area under the flame spread distance-time curve is determined; flame front recessions are ignored. The flame spread is then calculated as a function of the area under the curve relative to the standard red oak curve area. The value for flame spread classification for the tested material may be compared with that of inorganic reinforced cement board and select grade red oak flooring.

B. Smoke Developed

The smoke developed during the test is determined by the reduction in output of a photoelectric cell. A light beam vertically orientated across the furnace outlet duct is attenuated by the smoke passing through the duct. The output of the photoelectric cell is related to the obscuration of the light source through the duct caused by the smoke. A curve is developed by plotting photoelectric cell output against time. The value of smoke developed is derived by calculating the net area under the curve for the test material and comparing this area with the net area under the curve for unfinished select grade 23/32" red oak flooring.

V. FLAME SPREAD AND SMOKE DEVELOPED ROUNDING PROCEDURES

Single test calculated flame spread and smoke developed values are rounded to the nearest multiple of 5 and reported as the Flame Spread or Smoke Developed Index. Actual test values are available on request.

For multiple tests, the individual calculated flame spread and smoke developed values are recorded, averaged, and the results rounded to the nearest multiple of 5. The averaged, rounded number is reported as the Flame Spread or Smoke Developed Index.

VI. PREPARATION AND CONDITIONING OF TEST SAMPLES

Three or four sections are generally used in the preparation of a complete test specimen which is 20-1/2" wide and 24' long. Materials 8' in length may be tested by using three sections 20-1/2" wide by 8' long for a total specimen length of 24'. A 14" length of uncoated 16 gauge steel sheet is used to make up the remainder of the test specimen; it is placed at the fire end of the test chamber. Test specimens are conditioned at a controlled temperature of 73.4°F ($\pm$ 5°F) and a controlled relative humidity of 50 $\pm$ 5 percent.

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P.O. Box 2789, Reston, Virginia 20195-0789 U.S.A. 1825 Michael Faraday Drive, Reston, Virginia 20190-5350 TELEPHONE 703-435-2900 FAX 703-435-2537

VII. MATERIAL TESTED

1) Manufacturer: Novawall Systems, Inc.
Alexandria, Virginia

2) Burn Number 1

3) Average Thickness (in.) 1.643

4) Average Weight (lbs./sq.ft.) 2.44

5) Average Groove Depth (in.) N/A

6) Product Description: 1" (25mm) Novawall® Square Track Panels Stapled to 1/2" Gypsum Wallboard. At the perimeter of each panel 1" extruded PVC channels were attached. Midwall extrusions were attached to create a joint condition centered longitudinally betwee the gas burners. Novawall® construction: Fabric: Guilford FR 701. 1" Fiberglass Insulation. PVC channels.

7) Color Light blue

8) Surface Face side exposed

9) Sample Selection Manufacturer

10) Date of Selection 1/2002

11) Material Description by Manufacturer

12) Method of Mounting: Self supporting on ledges

13) Sample Conditioning (days) 11

VIII. TEST CONDITIONS AND DATA

1) Specimen Preheat Time (min.) 2:00

2) Tunnel Brick Temp. (deg.F) 100

3) Ignition Time (seconds) 19

4) Time to End of Tunnel or Flamefront Distance 3' @ 5:00

5) Time-Distance Curve Area (min./ft.) 23.8

6) Fuel and Temperature

a) Fuel (cu.ft./min.) 4.894

b) Max. Vent End Temp. (deg.F) 652

c) Time to Max. Temp. (min.) 4:15

7) After Flaming No

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IX. TEST RESULTS

Test results calculated on the basis of the areas under the curves of flame spread distance and smoke developed versus time are provided in the table below for calibration materials and for:

1" (25mm) Novawall® Square Track Panels
Stapled to 1/2" Gypsum Wallboard

Material Description	Flame Spread Index	Smoke Developed Index
High Density Inorganic Reinforced Cement Board	0	0
Red Oak Flooring	100	100
T-10891	10	115

OBSERVATIONS: Fabric consumed or melted away to 17 feet exposing fiberglass and PVC channels. Midwall PVC channel charred to 8 feet.

REMARKS: Fabric melting away in advance of the flamefront. No burning on tunnel floor.

CONCLUSIONS: Based on one test, the Flame Spread Index, calculated according to ASTM E 84, meets Class A (Class I) - 25 or under flame spread.

REPORT PREPARED BY:

K. P. Haile

KEVIN P. HAILE
FIRE TECHNOLOGIST

REPORT REVIEWED BY:

Russell Chapman

RUSSELL L. CHAPMAN
DIRECTOR, PRODUCT EVALUATION & STANDARDS

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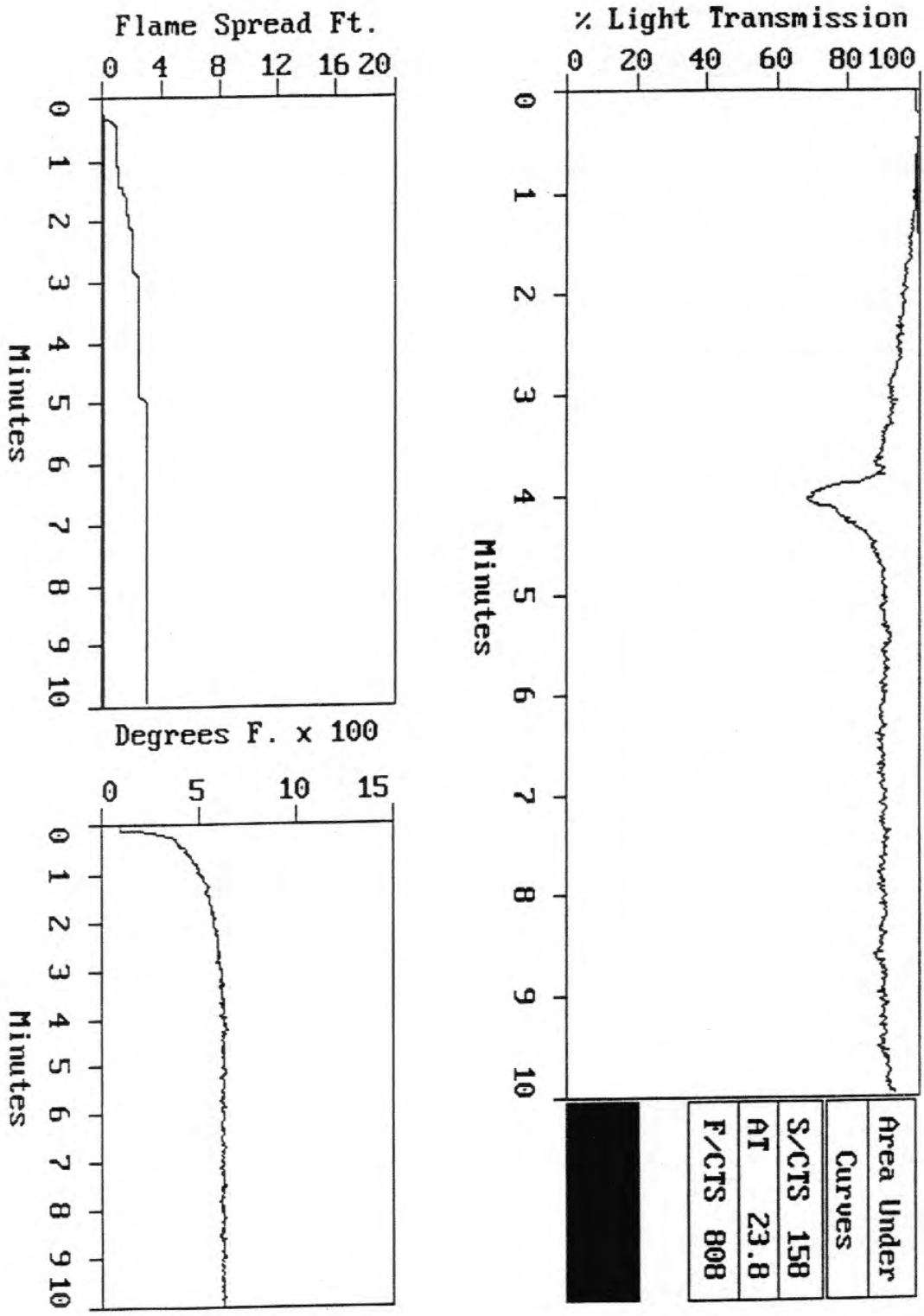
Test No. F-10891
Page 6 a of 7



LABORATORY ACCREDITATION

HPVA is a recognized ASTM E 84 testing laboratory by the following building code organizations under the Council of American Building Officials Report No. NER-TL329 and ICBO Evaluation Service Report No. TL 224.

International Conference of Building Officials
Building Officials and Code Administrators, International
Southern Building Code Congress International, Inc.

HPVA FLAME SPREAD PROPERTY VERIFICATION PROGRAM

The Hardwood Plywood & Veneer Association provides a product property verification program for flame spread properties. This program is based on the selection and testing of panels within a given marketing line on the basis of that combination of factors that theoretically should give the highest flame spread values. Such factors as panel thickness, specific gravity, color of stain, type of lamination, surface texture, and product mix are taken into consideration in the selection of flame spread samples.

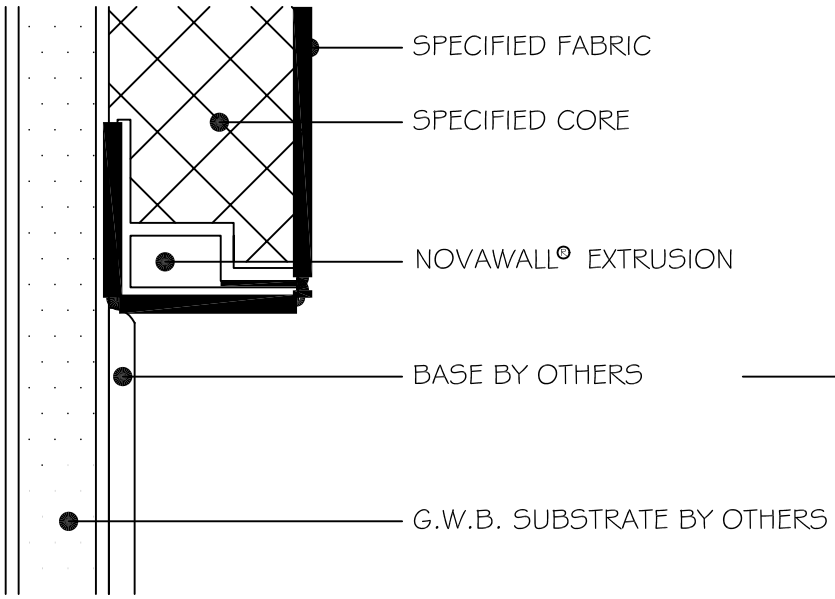
While it is standard procedure to include smoke developed values in test reports, the HPVA label identifies only the flame spread class.

The HPVA label is evidence that the marketing line has been tested and inspected in accordance with the HPVA Flame Spread Inspection and Verification Program Procedures.

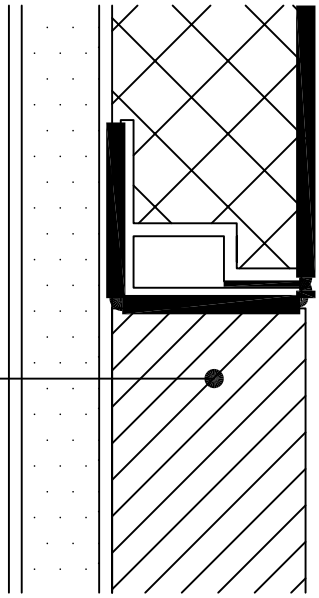
The HPVA label displayed below indicates conformance of the tested samples to the Type II glue bond requirements as set forth in ANSI/HPVA HP-1-2000 Standard For Hardwood And Decorative Plywood, and conformance to Flame Spread Class C (200 or less) as determined by the test procedures described in ASTM E 84. Depending on the type of product, the label may also include other information such as structural and formaldehyde emission ratings.

HARDWOOD PLYWOOD & VENEER ASSOCIATION		
BOND LINE TYPE II ANSI/HPVA HP-1-2000	HARDWOOD PLYWOOD AND VENEER ASSOCIATION hpva ® MILL 00 SPECIALTY GRADE	FLAME SPREAD 200 OR LESS CLASS C ASTM E 84 SIMULATED DECORATIVE FINISH ON PLYWOOD

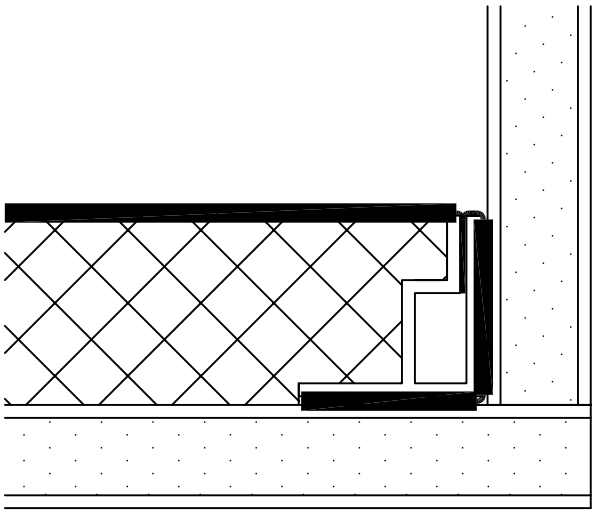
T/BP:1/2001



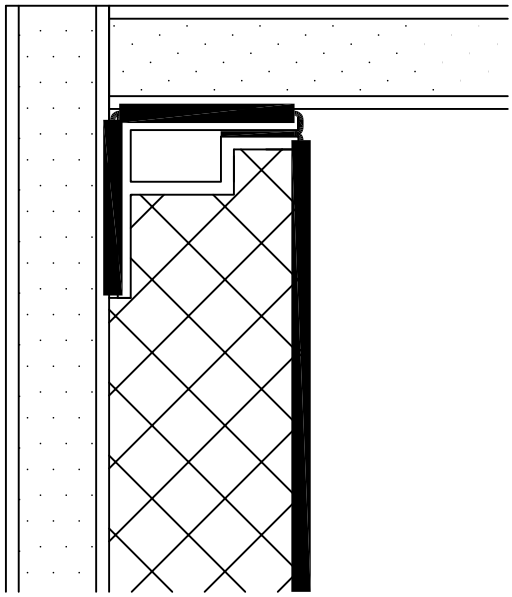
EDGE @ VINYL BASE



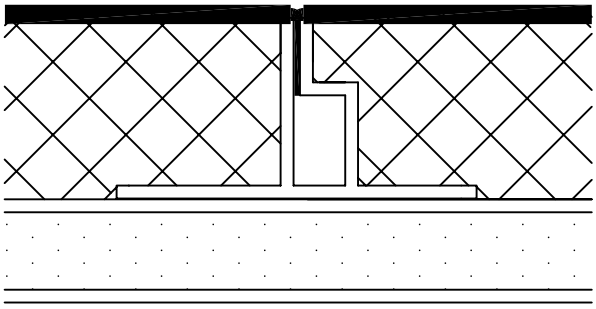
EDGE @ WOOD BASE



EDGE @ INSIDE CORNER



EDGE @ CEILING



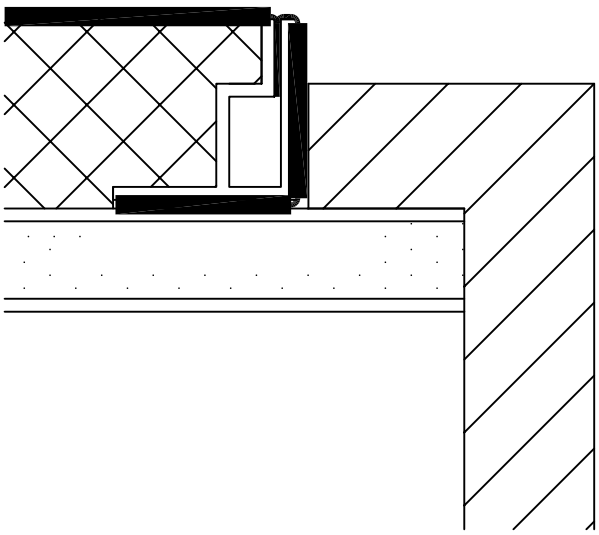
MIDSEAM

NOTE: DETAILS ARE AVAILABLE AT www.novawall.com
FOR DOWNLOAD IN AutoCAD® FORMAT.

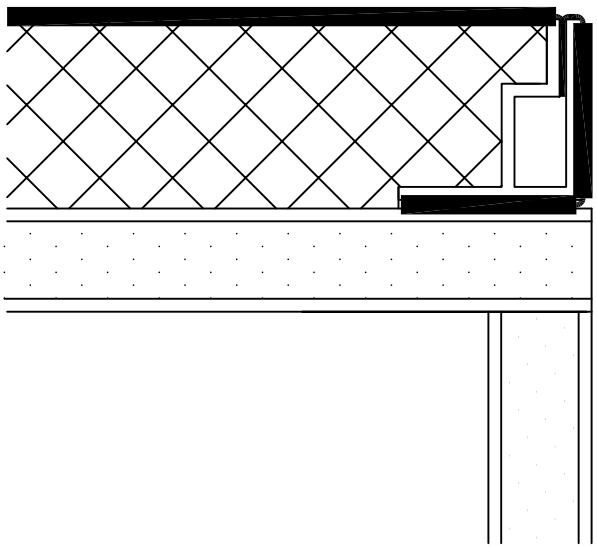
1" SQUARE CLASSIC EDGE DETAILS

SCALE: 1" = 1"

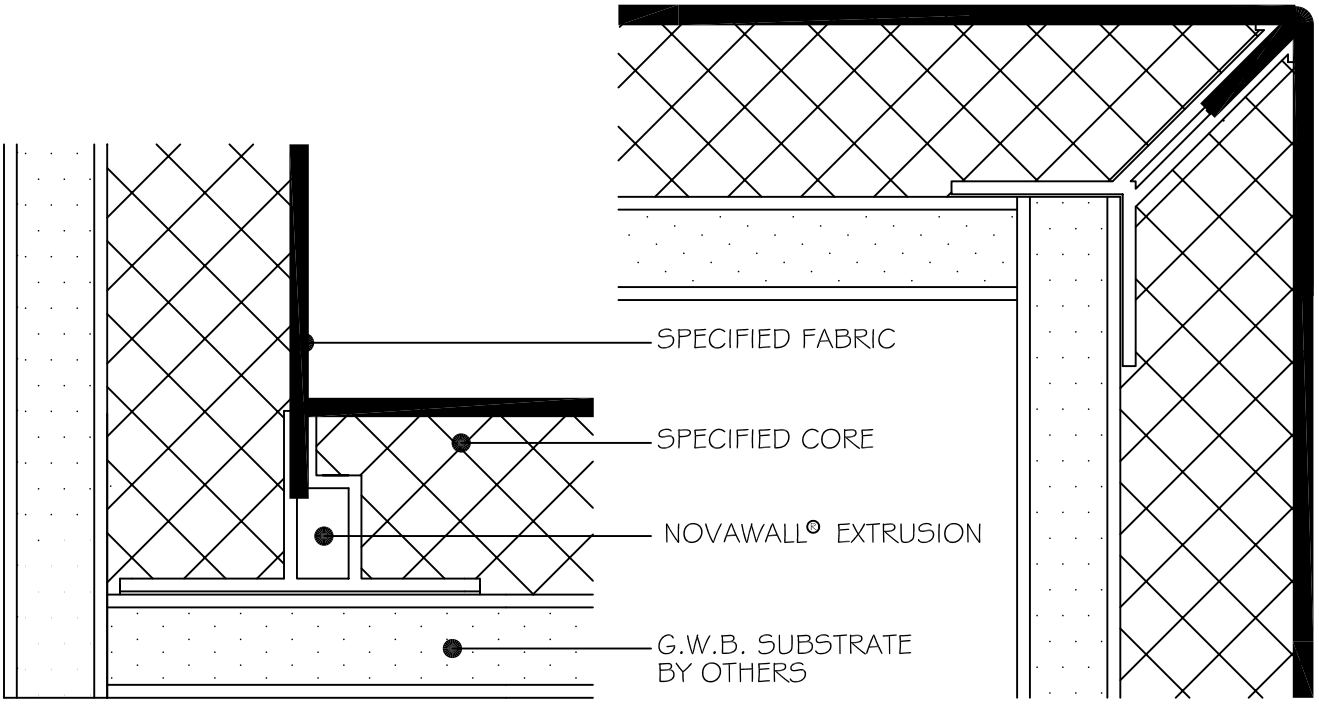
NOVAWALL SYSTEMS, INC.
885-B SOUTH PICKETT STREET
ALEXANDRIA, VIRGINIA 22304
(P) 800.695.6682



EDGE @ DOOR JAMB



EDGE @ OUTSIDE CORNER



INSIDE CORNER

OUTSIDE CORNER

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NOVAWALL SYSTEMS, INC.
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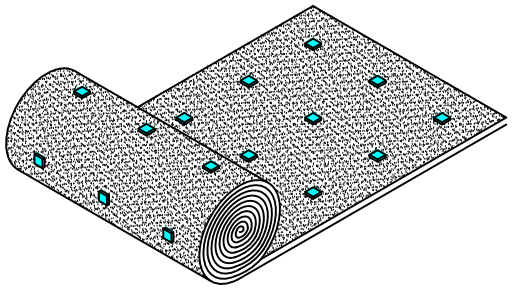
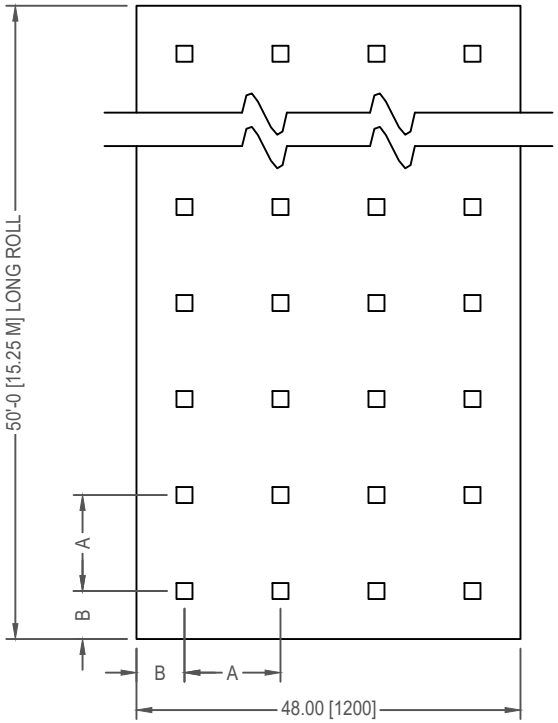
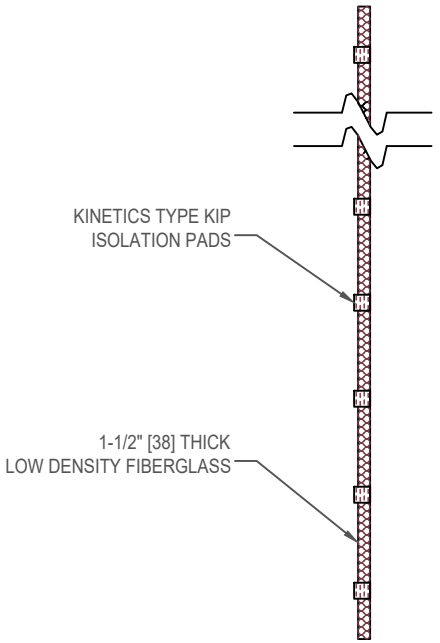
Model	Roll Size	Isolator Spacing	Max. Capacity PSF	A		B	
				in	mm	in	mm
RIM-L-2-12	4' x 50'	12"	200#	12.00	305	6.00	152
RIM-Q-2-12	4' x 50'	12"	400#	12.00	305	6.00	152
RIM-QR-2-12	4' x 50'	12"	800#	12.00	305	6.00	152
RIM-R-2-12	4' x 50'	12"	1200#	12.00	305	6.00	152
RIM-I-2-16	4' x 50'	16"	78#	16.00	406	8.00	203
RIM-L-2-16	4' x 50'	16"	112#	16.00	406	8.00	203
RIM-Q-2-16	4' x 50'	16"	225#	16.00	406	8.00	203
RIM-QR-2-16	4' x 50'	16"	450#	16.00	406	8.00	203
RIM-R-2-16	4' x 50'	16"	675#	16.00	406	8.00	203
RIM-L-2-24	4' x 50'	24"	50#	24.00	610	12.00	305
RIM-Q-2-24	4' x 50'	24"	100#	24.00	610	12.00	305
RIM-QR-2-24	4' x 50'	24"	200#	24.00	610	12.00	305
RIM-R-2-24	4' x 50'	24"	300#	24.00	610	12.00	305







DIMENSION FORMAT: IN [mm]

SCALE: 1/2" = 1'-0"

KINETICS® HardSide
ACOUSTICAL WALL PANELS

A combination of great appearance, superior acoustical performance, and design flexibility makes HardSide Acoustical Wall Panels the perfect solution for many interior reverberant noise problems.

HardSide is a traditional acoustical wall panel offering design versatility. A variety of shaped edges and panel thicknesses allow you to design for the desired appearance and acoustics. The perfect solution for many reverberant noise problems, HardSide delivers superior performance.

The core of this panel is a 6-7 PCF fiberglass board. The edges are chemically hardened for durability. Fabric facing, from the FR-701 collection from Guilford of Maine or factory-approved, customer-selected fabric, is stretched over the panel, wrapped and bonded around the edges for a crisp, finished look. Vinyl finishes are also available.

Design for panel sizes up to a maximum 4 ft. x 10 ft. or custom shaped panels with angled or contoured perimeter cuts.

KINETICS Noise Control

HardSide - Acoustical Wall Panels

DESCRIPTION

A versatile fiberglass acoustical wall panel wrapped in a wide selection of fabrics or vinyls.
Available with hardened shaped edges.
Engineered sound control with thicknesses from 1 to 4 inches and sizes up to 4 ft. x 10 ft.
5 ft. x 10ft. option available with 66-inch wide fabric.

COMPOSITION

6-7 PCF density fiberglass core
Chemically hardened edges
Wrapped in fabric from Guilford of Maine, or factory-approved customer-selected material

FIRE TEST DATA

Class A per ASTM E84

ACOUSTICAL PERFORMANCE

Sound Absorption per ASTM C-423. Type A Mounting

Frequency, (Hz)	125	250	500	1000	2000	4000	NRC
1" Thick	0.05	0.32	0.82	1.04	1.02	1.01	0.80
2" Thick	0.29	0.82	1.10	1.04	1.01	1.01	1.00
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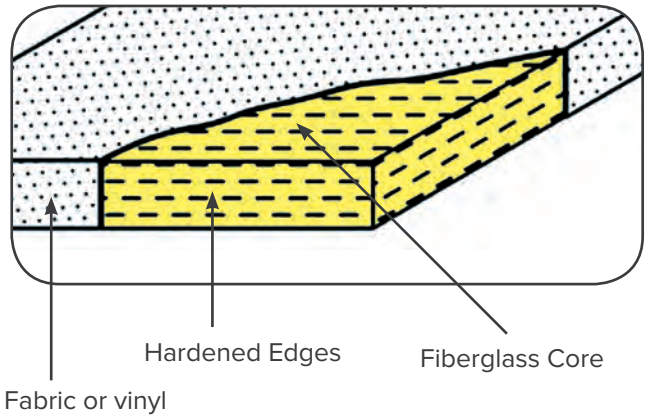

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Report On
Surface Burning Characteristics
Determined By
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Alexandria, Virginia

TEST NUMBER T-10891

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VII. MATERIAL TESTED

1)	Manufacturer:	Novawall Systems, Inc. Alexandria, Virginia
2)	Burn Number	1
3)	Average Thickness (in.)	1.643
4)	Average Weight (lbs./sq.ft.)	2.44
5)	Average Groove Depth (in.)	N/A
6)	Product Description:	1" (25mm) Novawall® Square Track Panels Stapled to 1/2" Gypsum Wallboard. At the perimeter of each panel 1" extruded PVC channels were attached. Midwall extrusions were attached to create a joint condition centered longitudinally betwee the gas burners. Novawall® construction: Fabric: Guilford FR 701. 1" Fiberglass Insulation. PVC channels.
7)	Color	Light blue
8)	Surface	Face side exposed
9)	Sample Selection	Manufacturer
10)	Date of Selection	1/2002
11)	Material Description by	Manufacturer
12)	Method of Mounting:	Self supporting on ledges
13)	Sample Conditioning (days)	11

VIII. TEST CONDITIONS AND DATA

1)	Specimen Preheat Time (min.)	2:00
2)	Tunnel Brick Temp. (deg.F)	100
3)	Ignition Time (seconds)	19
4)	Time to End of Tunnel or Flamefront Distance	3' @ 5:00
5)	Time-Distance Curve Area (min./ft.)	23.8
6)	Fuel and Temperature	
	a) Fuel (cu.ft./min.)	4.894
	b) Max. Vent End Temp. (deg.F)	652
	c) Time to Max. Temp. (min.)	4:15
7)	After Flaming	No

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LABORATORY AND TESTING SERVICE
P.O. Box 2789, Reston, Virginia 20195-0789 U.S.A. 1825 Michael Faraday Drive, Reston, Virginia 20190-5350 TELEPHONE 703-435-2900 FAX 703-435-2537

IX. TEST RESULTS

Test results calculated on the basis of the areas under the curves of flame spread distance and smoke developed versus time are provided in the table below for calibration materials and for:

1" (25mm) Novawall® Square Track Panels
Stapled to 1/2" Gypsum Wallboard

Material Description	Flame Spread Index	Smoke Developed Index
High Density Inorganic Reinforced Cement Board	0	0
Red Oak Flooring	100	100
T-10891	10	115

OBSERVATIONS: Fabric consumed or melted away to 17 feet exposing fiberglass and PVC channels. Midwall PVC channel charred to 8 feet.

REMARKS: Fabric melting away in advance of the flamefront. No burning on tunnel floor.

CONCLUSIONS: Based on one test, the Flame Spread Index, calculated according to ASTM E 84, meets Class A (Class I) - 25 or under flame spread.

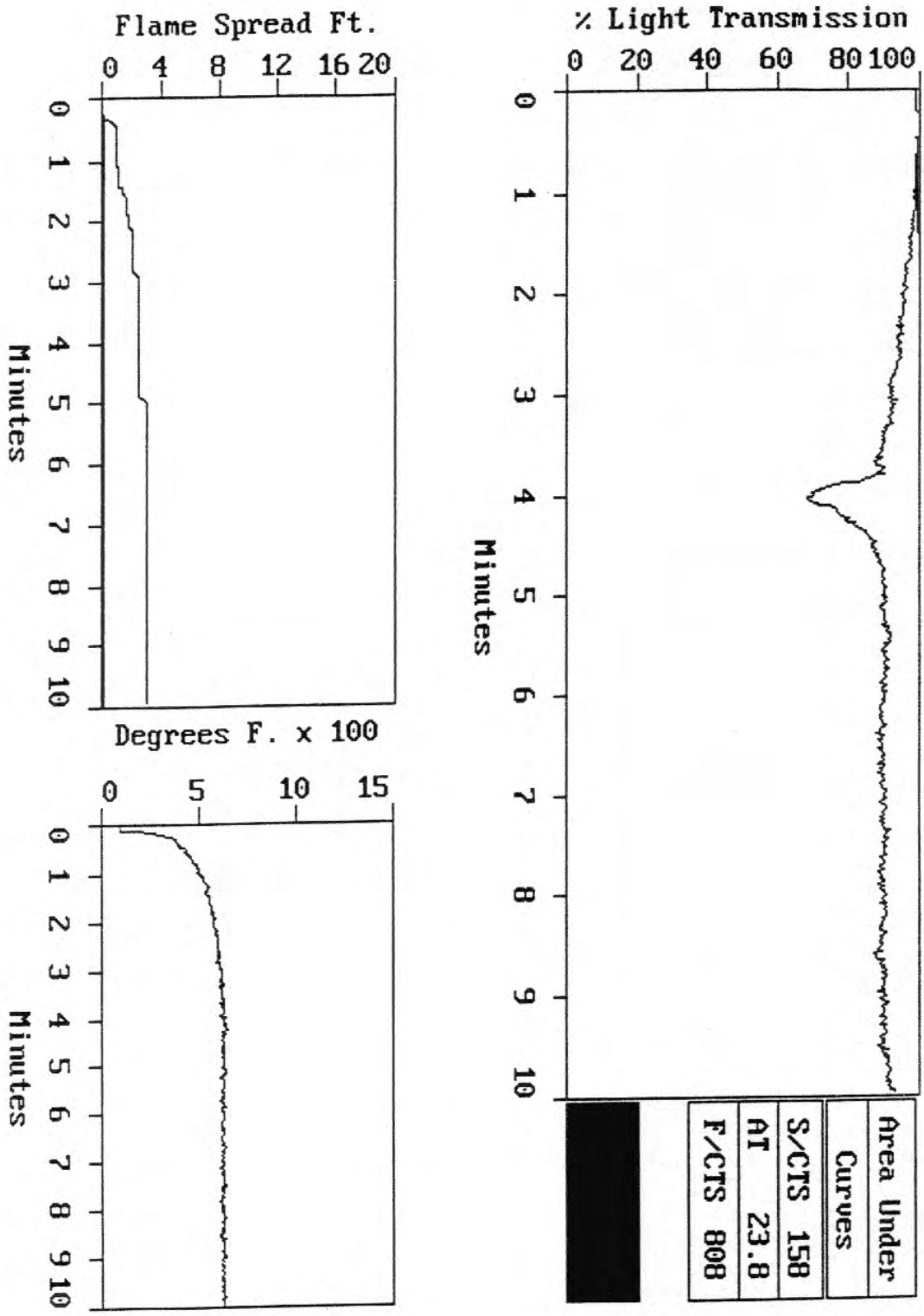
REPORT PREPARED BY:

KEVIN P. HAILE
FIRE TECHNOLOGIST

REPORT REVIEWED BY:

RUSSELL L. CHAPMAN
DIRECTOR, PRODUCT EVALUATION & STANDARDS

Test No. 1-10891
Page 6 a of 7



LABORATORY ACCREDITATION

HPVA is a recognized ASTM E 84 testing laboratory by the following building code organizations under the Council of American Building Officials Report No. NER-TL329 and ICBO Evaluation Service Report No. TL 224.

International Conference of Building Officials
Building Officials and Code Administrators, International
Southern Building Code Congress International, Inc.

HPVA FLAME SPREAD PROPERTY VERIFICATION PROGRAM

The Hardwood Plywood & Veneer Association provides a product property verification program for flame spread properties. This program is based on the selection and testing of panels within a given marketing line on the basis of that combination of factors that theoretically should give the highest flame spread values. Such factors as panel thickness, specific gravity, color of stain, type of lamination, surface texture, and product mix are taken into consideration in the selection of flame spread samples.

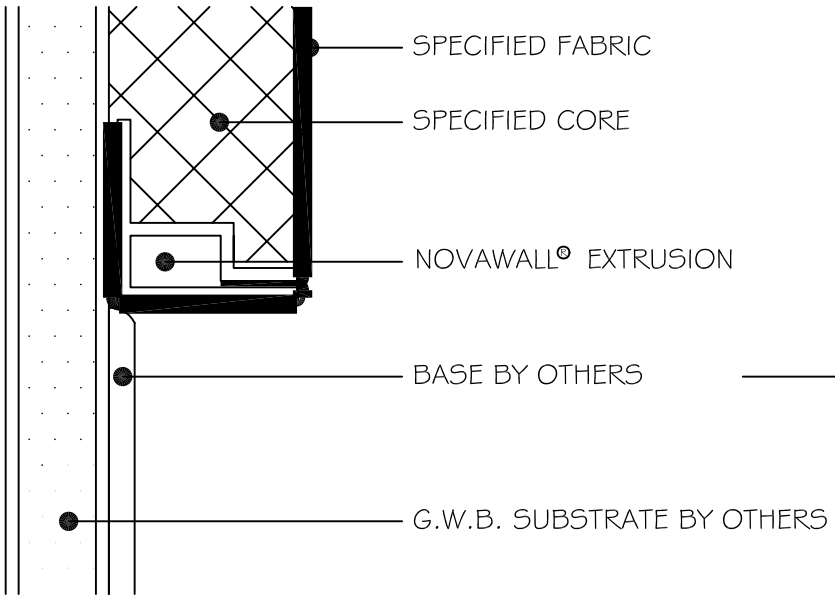
While it is standard procedure to include smoke developed values in test reports, the HPVA label identifies only the flame spread class.

The HPVA label is evidence that the marketing line has been tested and inspected in accordance with the HPVA Flame Spread Inspection and Verification Program Procedures.

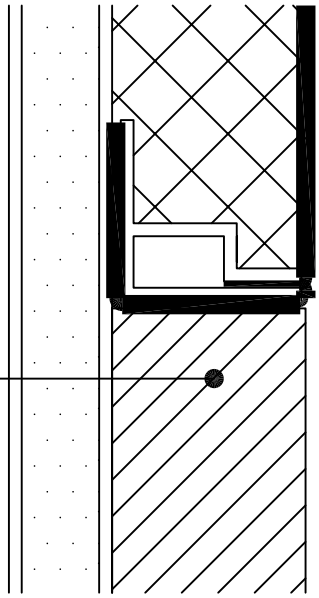
The HPVA label displayed below indicates conformance of the tested samples to the Type II glue bond requirements as set forth in ANSI/HPVA HP-1-2000 Standard For Hardwood And Decorative Plywood, and conformance to Flame Spread Class C (200 or less) as determined by the test procedures described in ASTM E 84. Depending on the type of product, the label may also include other information such as structural and formaldehyde emission ratings.

HARDWOOD PLYWOOD & VENEER ASSOCIATION		
BOND LINE TYPE II ANSI/HPVA HP-1-2000	HARDWOOD PLYWOOD AND VENEER ASSOCIATION hpva ® MILL 00 SPECIALTY GRADE	FLAME SPREAD 200 OR LESS CLASS C ASTM E 84 SIMULATED DECORATIVE FINISH ON PLYWOOD

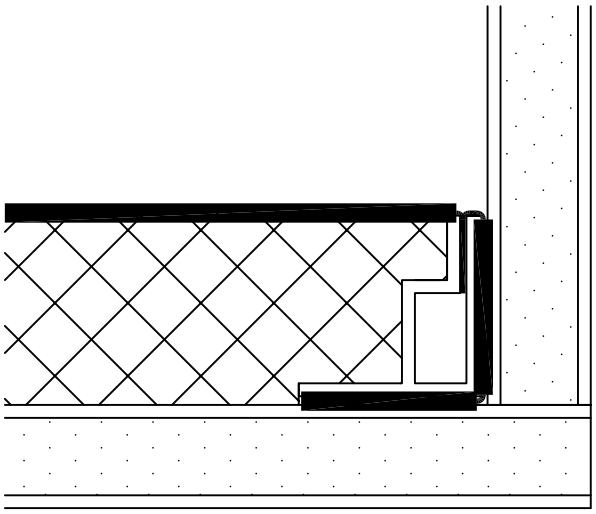
T/BP:1/2001



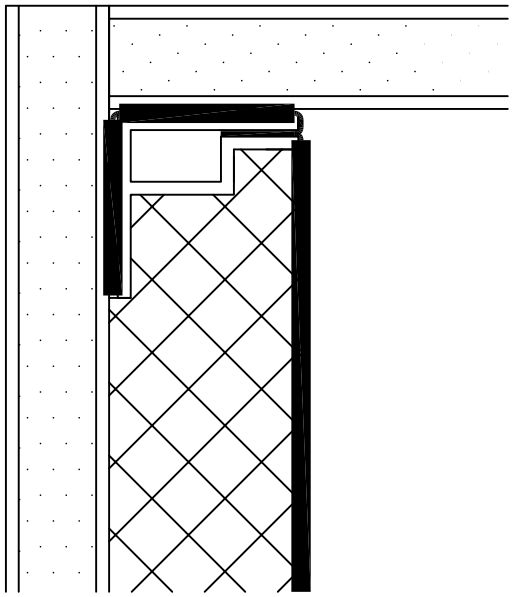
EDGE @ VINYL BASE



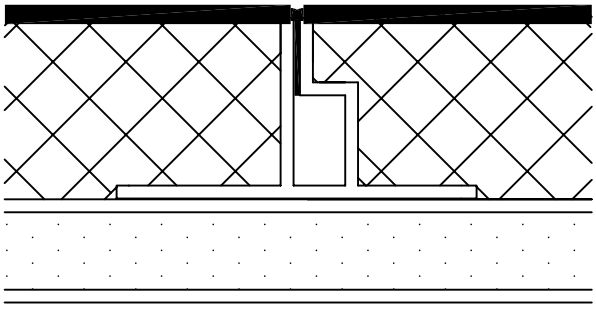
EDGE @ WOOD BASE



EDGE @ INSIDE CORNER



EDGE @ CEILING



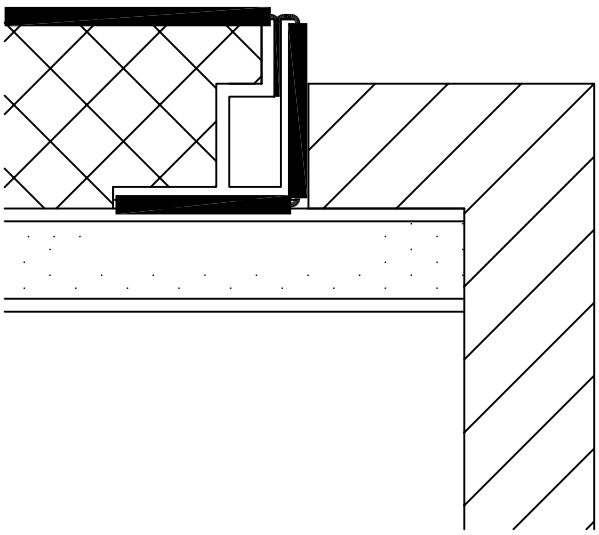
MIDSEAM

NOTE: DETAILS ARE AVAILABLE AT www.novawall.com
FOR DOWNLOAD IN AutoCAD® FORMAT.

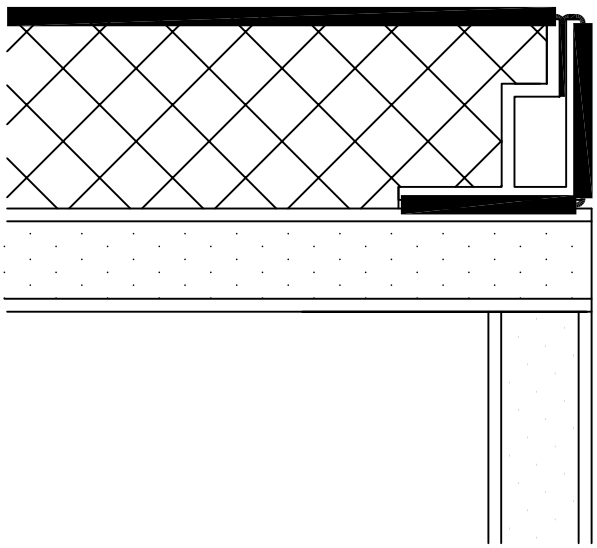
1" SQUARE CLASSIC EDGE DETAILS

SCALE: 1" = 1"

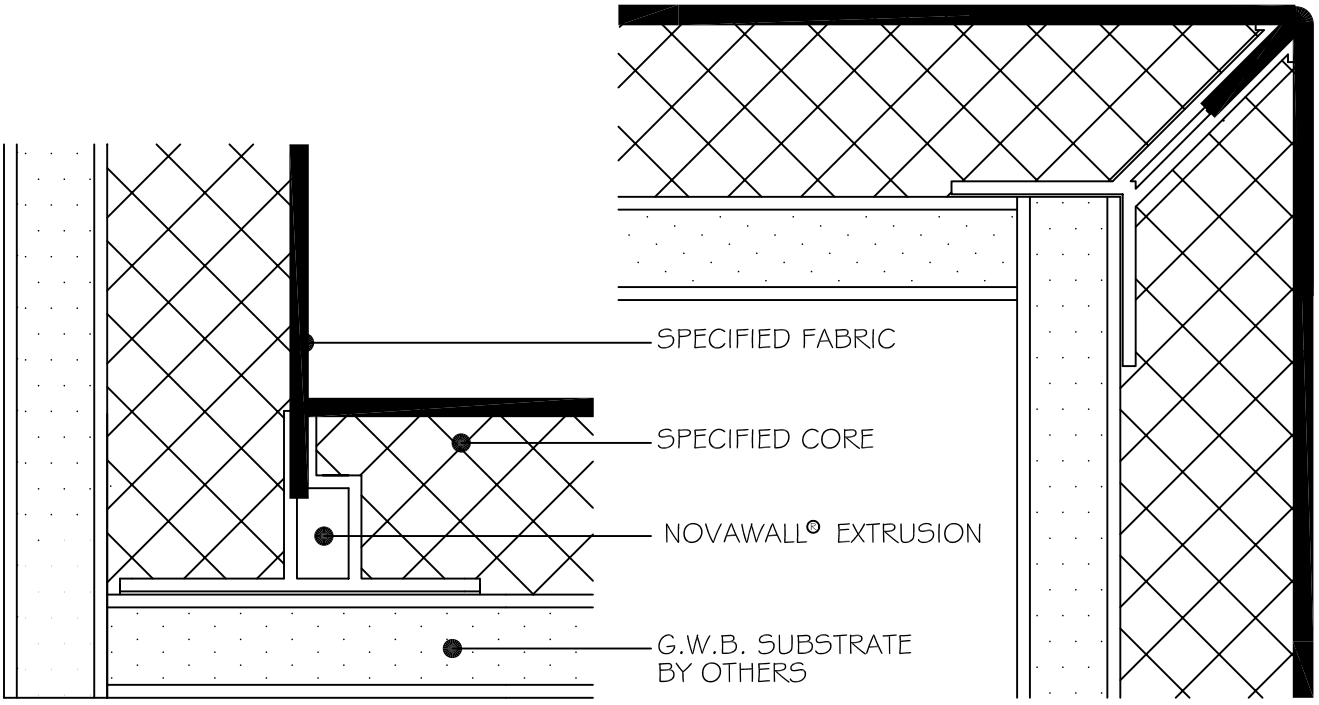
NOVAWALL SYSTEMS, INC.
885-B SOUTH PICKETT STREET
ALEXANDRIA, VIRGINIA 22304
(P) 800.695.6682



EDGE @ DOOR JAMB



EDGE @ OUTSIDE CORNER



INSIDE CORNER

OUTSIDE CORNER

NOTE: DETAILS ARE AVAILABLE AT www.novawall.com
FOR DOWNLOAD IN AutoCAD FORMAT.

1" SQUARE CLASSIC EDGE DETAILS

SCALE: 1" = 1"

NOVAWALL SYSTEMS, INC.
885-B SOUTH PICKETT STREET
ALEXANDRIA, VIRGINIA 22304
(P) 800.695.6682

kineticsnoise.com/rim/wood

RIM Wood

RIM is an easy to install, high-performance noise control system. The rolls of RIM use acoustic batting to prespace isolation pads which forms an airspace—an essential component for noise control.

The KIP pad is at the core of RIM's acoustic performance. Uniquely permanent and dynamically predictable, this isolation medium provides freedom of design due to its stable natural frequency across a wide range of variable loading situations. The pads are available in different sizes and densities with adjustable spacing in the roll of RIM. Shop drawings, which incorporate pad selection and spacing, are included with the system.

Compared to other high performing isolation systems, RIM installation is quick and simple. Each roll is designed so the pads line up with the adjacent unrolled material. After RIM has been laid out and installed, it is covered with plywood composite and finished flooring.

If better performance is required, consider adding more mass in the form of concrete.
Find details at kineticsnoise.com/rim/concrete

KINETICS Noise Control®
kineticsnoise.com
sales@kineticsnoise.com
1-800-959-1229

KINETICS Noise Control

Address: 6300 Irelan Place, Dublin, Ohio 43017
Phone: 800.959.1229
Fax: 614.889.0540
Web: www.KineticsNoise.com
Email: ArchSales@KineticsNoise.com

ROLL-OUT ISOLATION MATERIAL / FIBERGLASS ISOLATOR

RIM SYSTEM/ KIP ISOLATOR

INSTALLATION GUIDELINES FOR WOOD FLOOR

Preparation

- Ensure a strong, rigid subfloor with deflection not exceeding 1/360 of the span, including live and dead loads.
- Subfloor shall be clean, flat, and level. To ensure proper support of the isolated composite across the floor isolation system, please use the following F-Number System values for Structural Slab design:

  A. Floor Flatness Numbers (F_F):
  Specified Overall Value = 38
  Minimum Local Value = 25
  B. Floor Levelness Numbers (F_L):
  Specified Overall Value = 33
  Minimum Local Value = 25

- Fill cracks and remove residue.
- If a waterproof membrane is installed on structural floor, it shall be load bearing.
- Concrete subfloor shall be troweled smooth, free from spills/voids, and be clean and dry.
- Wood subfloors shall be free of weak spots, squeaks, protruding nails, screws, staples, and be clean and dry.

Kinetics Noise Control SRP Perimeter Isolation (SRP)

1. Cut SRP to a width equal to ¼-inch less than planned floor system height.
2. Apply spray adhesive (such as Camie 363 High Strength Fast Tack Spray Adhesive), following manufactures directions, to one side of SRP (alternatively double sided tape may be used).
3. Firmly adhere it to any wall or vertical position (including door frames) surrounding the perimeter of the RIM System/KIP Isolator installation area.
4. Adhere SRP to any protrusions through the floor system including floor drains, columns, pipes, conduit, etc following steps 1-3.

Note: Never attach the perimeter isolation board with nails, screws, or staples.

Option A) KIP Isolator Installation

5A. Locate isolation pads per submittal drawing. Isolator spacing will vary depending on load requirements. It is recommended to snap chalk lines to align isolators. There shall be no more than 4” between the perimeter and the first row of pads.

6A. (OPTIONAL) Apply a dab of construction adhesive to bottom of isolator before setting on the floor.

Note: Top of pad is clearly stamped and must be oriented with “Top” side up to perform properly. No adhesive required on top of isolator.

Option B) RIM System Installation

5B. Roll out the RIM System onto the subfloor. Along the perimeter cut or tuck the fiberglass batt so that there is no more than 4” from the perimeter of the installation area and first row of isolators.

6B. Maintain equal spacing between isolators from one roll of material to the next as there is between isolators on the same roll. (i.e., 12”, 16”, 24”….)

7B. If needed, install a row of isolators to maintain maximum spacing of isolators from penetrations

a. Cut away low-density fiberglass
b. Install isolators as described in option A.

8B. If indicated on submittal drawings, install “High Load” isolators.

c. Locate “High Load” isolator location
d. Cut away low density fiberglass
e. Install isolators as described in option A.

9. Select the proper plywood using chart below. Lay the first layer of plywood on top of isolators, butting up to but not compressing against the perimeter isolation material (SRP). Stagger joints between rows by 4 feet.

RIM/KIP Spacing	Carpet or (5/8” min) Hardwood	All Other Finishes
12” Pad Spacing	(2) Layers of APA Rated Span 32/16, 1/2” Thick, EXP-1, Fir 4-ply plywood	(2) Layers of APA Rated Span 32/16, 3/4” Thick, EXP-1, Fir 4-ply plywood
16” Pad Spacing	(2) Layers of APA Rated Span 32/16, 1/2” Thick, EXP-1, Fir 4-ply plywood	(2) Layers of APA Rated Span 32/16, 3/4” Thick, EXP-1, Fir 4-ply plywood
24” Pad Spacing	(2) Layers of APA Rated Span 32/16, 3/4” Thick, EXP-1, Fir 4-ply plywood	Not Suggested

SPECIAL NOTE FOR PLYWOOD: Composite floor system rests atop isolators that will deflect under load. Kinetics deems Plywood Veneer Grade “D” unacceptable for face, back and inner plies; if Veneer Grade “C” ply is used in the sheathing, Grade Stress Level S-1 or S-2 (Veneer Grade “D” ply unacceptable) may be used. Grade Stress Level S-3 deemed unacceptable. Check with finished flooring supplier for additional requirements.

10. Prior to installing the second layer of plywood, use a trowel to apply liquid wood glue to the entire top face of the first layer of plywood, following the glue instructions for proper setup time, drying time, etc.

11. Lay second layer of plywood on top of first layer of plywood at a 90º relation, staggering and overlapping joints a minimum of 24 inches top to bottom.

Note: Spacing of the top layer of plywood, edge to edge, should be determined by the finish flooring manufacturer. Example: Hardwood floor companies often recommend a 1/8” space between plywood sheets (top layer).

12. Using 1-1/4” screws for 3/4” plywood and 1” for1/2” plywood, space approximately 6” on center along the outside of the plywood as well as any penetrations, and a maximum 8” on center each way in the center of the plywood Start the row of screws no more than 3” away from the edge of the second layer of plywood.

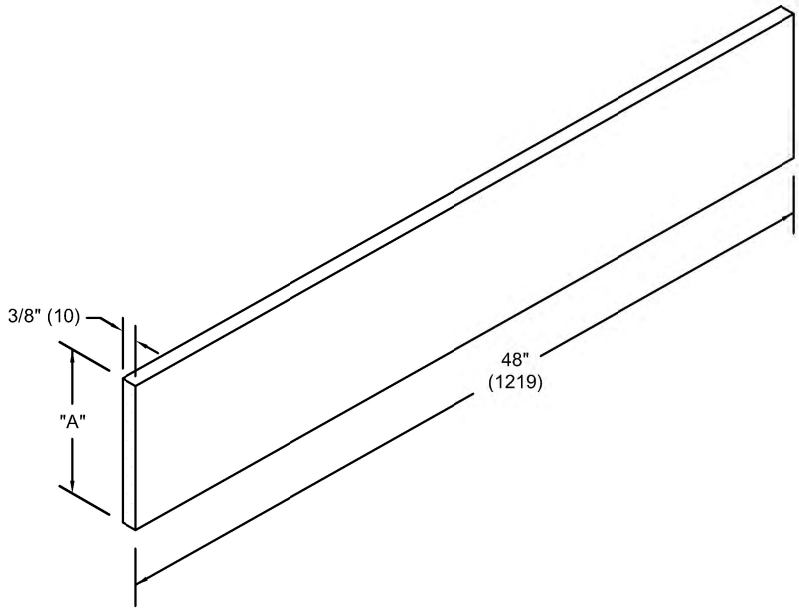
13. Install finish flooring per recommendations of the flooring manufacturer.

Disclaimer

These suggested installation guidelines represent generally accepted procedures for successful installation of Kinetics Noise Control Model RIM Roll-out Isolation Material / KIP Fiberglass isolators for floating wood floor isolation. These suggestions may be followed, modified, or rejected by the owner, engineer, contractor, and/or their respective representative(s) since they, not Kinetics Noise Control, are responsible for planning and executing procedures appropriate to a specific application. Kinetics Noise Control reserves the right to alter these suggestions and encourages contact with the factory or its representatives to review any possible modification to these suggested guidelines prior to commencing installation

SRP (SOUND RATED PERIMETER STRIP)		
PROPERTY	**VALUE**	**SPECIFICATION**
DESCRIPTION	POLYETHYLENE FOAM	
DENSITY (LB/FT)	2.2	ASTM D3575-08
CELL SIZE (MM AVERAGE)	1.5	ASTM D3576-04 MODIFIED
COMPRESSIVE SET (% ORIGINAL THICKNESS)	<20%	ASTM D3575-08 SUFFIX B
COMPRESSIVE CREEP (% DEFLECTION)	<10% @ 2.5 PSI	ASTM D3575-08 SUFFIX BB (1000 HRS.)
TENSILE STRENGTH (PSI) (@ 1/2" THICKNESS)	31	ASTM D3575-08 SUFFIX T
TEAR RESISTANCE (LB/IN) (@ 1/2" THICKNESS)	10	ASTM D3575-08 SUFFIX G
WATER ABSORPTION (LB/FT)	<0.3	ASTM D3575-08
THERMAL RESISTANCE R-VALUE (HR-FT - F/BTU)	2.3	ASTM C518-91
THERMAL CONDUCTIVITY k-VALUE (BTU-IN/HR^2- °F)	0.43	ASTM C518-91
THERMAL STABILITY (%)	<2%	ASTM D3575-08 SUFFIX S

DIMENSION "A"	
(in)	**(mm)**
1.00	25
2.00	51
3.00	76
4.00	102
5.00	127



DIMENSION FORMAT: IN (mm)

SCALE: 6" = 1'-0"

KINETICS Noise Control®

SRP (SOUND RATED PERIMETER STRIP): ENGINEERING PROPERTIES

Revised 09/03/2020

Drawing No. AA001907

kineticsnoise.com/perimeter

LEED Analysis

PPI/SRP Perimeter Penetration Interface

Recycled Content

This product does not contain significant recycled content.

Fabrication Location

This product is manufactured in Dublin, OH 43017

Material Source

The extraction points for the materials in this product cannot be verified. Assume they are outside of the 500 mile radius.

Kinetics Noise Control, Inc., 6300 Irelan Place, Dublin, Ohio, 43017
Telephone: 614-889-0480 | Fax: 614-889-0540
www.kineticsnoise.com | sales@kineticsnoise.com

SAFETY DATA SHEET

ARTICLE STATEMENT

Product names:
PPI
SRP

This document is provided for clarification of the Safety Data Sheet that you have requested for our product(s). OSHA Hazard Communication Standard requires a SDS for hazardous chemicals; however, the standard exempts all articles from the requirement. The explanation of an article is described per OSHA definition below.

Pursuant to 29 CRF 1910.1200 (b) (6) (v) and (c), the product described herein is an “article” or is otherwise excluded from OSHA regulations requiring that a Material Safety Data Sheet be prepared for it.

An article defined: manufactured item other than a fluid or particle:(*i*) which is formed to a specific shape or design during manufacture; (*ii*) which has an end use function(s) dependent in whole or in part upon its shape or design during end use; and (*iii*) which does not release, or otherwise result in exposure to, a hazardous chemical under normal conditions of use.

For technical information and additional resources covering these products please refer to Kinetics Noise Control’s published literature, e.g., data sheets, product drawings, and installation guidelines at www.kineticsnoise.com.

As of the date of this document, the foregoing information is believed to be accurate and is provided in good faith to comply with applicable federal and state laws. However, no warranty or representation of law or fact, with respect to such information, is intended or given.

SECTION 099113 - PAINTING

PART 1 GENRAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the painting as shown on the drawings and/or specified herein, including, but not limited to, the following:

1. Painting all new ferrous metal (except stainless steel) exposed to view.

2. Painting all new galvanized ferrous metals exposed to view.

3. Painting new gypsum drywall exposed to view and existing drywall surfaces as described herein.

4. Painting of new wood trim.

5. Incidental painting and touching up as required to produce proper finish for painted surfaces.

6. Painting of any surface not specifically mentioned to be painted herein or on drawings, but for which painting is obviously necessary to complete the job, or work which comes within the intent of these specifications, shall be included as though specified.

1.3 RELATED SECTIONS.

A. Carpentry — Section 061053.

c. Gypsum drywall — Section 092900.

1.4 QUALITY ASSURANCE

A. Qualification of Painters: Use only qualified journeyman painters for the mixing and application of paint on exposed surfaces.

B. Paint Coordination: Provide finish coats which are compatible with the prime paints used. Review other Sections of these specifications in which prime paints are to be provided to ensure compatibility of the total coatings system for the various substrates. Upon request from other subcontractors, furnish information on the characteristics of the finish materials proposed to be used, to ensure that compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify the Architect in writing of any anticipated problems using the coating systems as specified with substrates primed by others.

C. VOC Content of Interior Paint

1. The Volatile Organic Compound (VOC) content of interior paints shall not exceed the limits defined in the “Green Seal Standard for Architectural Coating” (GS-11), latest edition. The VOC limits are as follows. All VOC limits are defined in grams per liter, less water.

2. Paint

a.	Non-flat interior coatings	150
b.	Flat interior coatings	50

1.5 SUBMITTALS

A. Materials List

1. Before any paint materials are delivered to the job site, submit to the Architect a complete list of all materials proposed to be furnished and installed under this portion of the work.

2. This shall in no way be construed as permitting substitution of materials for those specified or accepted for this work by the Architect.

3. Submit data indicating that interior paint meets VOC standard specified herein.

B. Samples

1. Accompanying the materials list, submit to the Architect copies of the full range of colors available in each of the proposed products.

2. Upon direction of the Architect, prepare and deliver to the Architect two (2) identical sets of Samples of each of the selected colors and glosses painted onto 8-1/2" x 11" x 1/4" thick material; whenever possible, the material for Samples shall be the same material as that on which the coating will be applied in the work.

C. Manufacturer's Recommendations: In each case where material proposed is not the material specified or specifically described as an acceptable alternate in this Section of these specifications, submit for the Architect's review the current recommended method of application published by the manufacturer of the proposed material.

1.6 PRODUCT HANDLING

A. Deliver all paint materials to the job site in their original unopened containers with all labels intact and legible at time of use.

B. Protection

1. Store only the approved materials at the job site, and store only in a suitable and designated area restricted to the storage of paint materials and related equipment.

2. Use all means necessary to ensure the safe storage and use of paint materials and the prompt and safe disposal of waste.

3. Use all means necessary to protect paint materials before, during and after application and to protect the installed work and materials of all other trades.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

1.7 EXTRA STOCK

A. Upon completion of this portion of the Work, deliver to the Owner an extra stock of paint equaling approximately ten (10) percent of each color and gloss used and each coating material used, with all such extra stock tightly sealed in clearly labeled containers.

1.8 JOB CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 50 degrees F. and 90 degrees F., unless otherwise permitted by the paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 45 degrees F. and 95 degrees F. unless otherwise permitted by the paint manufacturer's printed instructions.

a. Do not apply exterior paint in snow, rain, fog or mist; or when the relative humidity exceeds eighty-five (85) percent; or to damp or wet surfaces; unless otherwise permitted by the paint manufacturer's printed instructions.

D. Painting may be continued during inclement weather only if the areas and surfaces to be painted are enclosed and heated within the temperature limits specified by the paint manufacturer during application and drying periods.

PART 2 PRODUCTS

2.1 PAINT MANUFACTURERS

A. Provide the painting products listed for all required painting made by one of the manufacturers These companies are Benjamin Moore, ICI Dulux Paints (ICI) and Sherwin Williams (S-W). Pratt and Lambert Paint. Comply with number of coats and and manufacturer's recommended required minimum mil thicknesses as specified herein.

2.2 MATERIALS

A. Provide undercoat paint produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only to recommended limits.

B. Colors and Glosses: All colors and glosses shall be as selected by the Architect. Certain colors will require paint manufacturer to prepare special factory mixes to match colors selected by the Architect. Color schedule (with gloss) shall be furnished by the Architect.

C. Coloring Pigment: Products of or furnished by the manufacturer of the paint or enamel approved for the work.

2.3 GENERAL STANDARDS

A. The various surfaces shall be painted or finished as specified below in Article 2.4. However, the Architect reserves the right to change the finishes within the range of flat, semi-gloss or gloss, without additional cost to the Owner.

B. All paints, varnishes, enamels, lacquers, stains and similar materials must be delivered in the original containers with the seals unbroken and label intact and with the manufacturer's instructions printed thereon.

C. All painting materials shall bear identifying labels on the containers with the manufacturer's instructions printed thereon.

D. Paint shall not be badly settled, caked or thickened in the container, shall be readily dispersed with a paddle to a smooth consistency and shall have excellent application properties.

E. Paint shall arrive on the job color-mixed except for tinting of under-coats and possible thinning.

F. All thinning and tinting materials shall be as recommended by the manufacturer for the particular material thinned or tinted.

G. It shall be the responsibility of the Contractor to see that all mixed colors match the color selection made by the Architect prior to application of the coating.

2.4 SCHEDULE OF FINISHES

A. Exterior Galvanized Ferrous Metal

Semi-Gloss

Primer
First Coat
Second Coat:

B. Interior Ferrous Metal

Satin Finish/Latex
Primer:
First Coat
Second Coat:

Semi-Gloss Finish/Latex
Primer:
First Coat:
Second Coat:

Interior Drywall
Flat Finish/Vinyl Acrylic Latex
Primer
First Coat
Second Coat

C. Interior Painted Wood:

Satin Finish/Latex
Primer
First Coat
Second Coat

2.5 EXISTING SURFACES TO BE PAINTED

A. Existing surfaces that are to remain and are damaged and/or require painting as noted herein shall be painted in accordance with schedule given in Article 2.4 herein except that first or prime coat may be eliminated where existing paint is sound. Where existing paint must be removed down to base material, provide first or prime coat as specified.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where painting and finishing are to be applied and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 GENERAL WORKMANSHIP REQUIREMENTS

A. Only skilled mechanics shall be employed. Application may be by brush or roller. Spray application only upon acceptance from the Architect in writing.

B. The Contractor shall furnish the Architect a schedule showing when he expects to have completed the respective coats of paint for the various areas and surfaces. This schedule shall be kept current as the job progresses.

C. The Contractor shall protect his work at all times, and shall protect all adjacent work and materials by suitable covering or other method during progress of his work. Upon completion of the work, he shall remove all paint and varnish spots from floors, glass and other surfaces. He shall remove from the

premises all rubbish and accumulated materials of whatever nature not caused by others and shall leave his part of the work in clean, orderly and acceptable condition.

D. Remove and protect hardware, accessories, device plates, lighting fixtures, and factory finished work, and similar items, or provide ample in place protection. Upon completion of each space, carefully replace all removed items by workmen skilled in the trades involved.

E. Remove electrical panel box covers and doors before painting walls. Paint separately and re-install after all paint is dry.

F. All materials shall be applied under adequate illumination, evenly spread and flowed on smoothly to avoid runs, sags, holidays, brush marks, air bubbles and excessive roller stipple.

G. Coverage and hide shall be complete. When color, stain, dirt or undercoats show through final coat of paint, the surface shall be covered by additional coats until the paint film is of uniform finish, color, appearance and coverage, at no additional cost to the Owner.

H. All coats shall be dry to manufacturer's recommendations before applying succeeding coats.

3.3 PREPARATION OF SURFACES

A. Existing Surfaces: Clean existing surfaces requiring paint or finishing, remove all loose and flaking paint or finish and sand surface smooth as required to receive new paint or finish. No "telegraphing" of lines, ridges, flakes, etc., through new surfacing is permitted. Where this occurs, Contractor shall be required to sand smooth and re-finish until surface meets with Architect's approval.

1. Where new drywall surfaces abut existing drywall, paint new drywall and extend paint over existing drywall to a natural break such as corners or projections as directed by the Architect.

B. General

1. The Contractor shall be held wholly responsible for the finished appearance and satisfactory completion of painting work. Properly prepare all surfaces to receive paint, which includes cleaning, sanding, and touching-up of all prime coats applied under other Sections of the work. Broom clean all spaces before painting is started. All surfaces to be painted or finished shall be perfectly dry, clean and smooth.

2. Perform all preparation and cleaning procedures in strict accordance with the paint manufacturer's instructions and as herein specified, for each particular substrate condition.

3. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease with clean cloths and cleaning solvents prior to mechanical cleaning. Program the cleaning and painting so that dust and other contaminants from the cleaning process will not fall in wet, newly painted surfaces.

C. Metal Surfaces

1. Weld Fluxes: Remove weld fluxes, splatters, and alkali contaminants from metal surfaces in an approved manner and leave surface ready to receive painting.

2. Bare Metal: Thoroughly clean off all foreign matter such as grease, rust, scale and dirt before priming coat is applied. Clean surfaces, where solder flux has been used, with benzene. Clean surfaces by flushing with mineral spirits. For aluminum surfaces, wipe down with an oil free solvent prior to application of any pre-treatment.

a. Bare metal to receive high performance coating specified herein must be blast cleaned SSPC SP-6 prior to application if field applied primer; coordinate with steel trades furnishing ferrous

metals to receive this coating to insure that this cleaning method is followed.

3. Shop Primed Metal: Clean off foreign matter as specified for "Bare Metal." Prime bare, rusted, abraded and marred surfaces with approved primer after proper cleaning of surfaces. Sandpaper all rough surfaces smooth.

4. Galvanized Metal: Prepare surface as per the requirements of ASTM D 6386.

5. Metal Filler: Fill dents, cracks, hollow places, open joints and other irregularities in metal work to be painted with an approved metal filler suitable for the purpose and meeting the requirements of the related Section of work; after setting, sand to a smooth, hard finish, flush with adjoining surface.

D. Gypsum Drywall Surfaces: Scrape off all projections and splatters, spackles all holes or depressions, including taped and shackled joints, sand smooth. Conform to standards established in Section 092900 Gypsum Drywall.

E. Wood Surfaces: Sand to remove all roughness, loose edges, slivers, or splinters and then brush to remove dust. Wash off grease or dirt with an approved cleaner. Fill all cracks, splits, nail holes, screw holes, and surface defects with putty after the priming coat has been applied. Putty shall be brought up flush with the surface and sanded smooth and touched-up with primer when dry.

3.4 MATERIALS PREPARATION

A. Mix and prepare painting materials in strict accordance with the manufacturer's directions.

B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.

c. Stir all materials before application to produce a mixture of uniform density, and as required during the application of the materials. Do not stir any film which may form on the surface into the material. Remove the film and, if necessary, strain the material before using.

D. Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are to be applied. Tint undercoats to match the color of the finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

3.5 APPLICATION

A. General

1. Apply paint by brush or roller in accordance with the manufacturer's directions. Use brushes best suited for the type of material being applied. Use rollers of carpet, velvet back, or high pile sheep's wool as recommended by the paint manufacturer for material and texture required.

2. The number of coats and paint film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has completely dried. Sand between each enamel or varnish coat application with fine sandpaper, or rub surfaces with pumice stone where required to produce an even, smooth surface in accordance with the coating manufacturer's directions.

3. Apply additional coats when undercoats, stains, or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance. Give special attention to insure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a film thickness equivalent to that of flat surfaces.

4. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.

a. ”Exposed surfaces” is defined as those areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, etc., are in place in areas scheduled to be painted.

5. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint, before final installation of equipment.

6. Paint the back sides of access panels, removable or hinged covers to match the exposed surfaces.

7. Finish doors on tops, bottoms, and side edges the same as the faces, unless otherwise indicated.

8. Enamel finish applied to wood or metal shall be sanded with fine sandpaper and then cleaned between coats to produce an even surface.

9. Paste wood filler applied on open grained wood after beginning to flatten, shall be wiped across the grain of the wood, then with a circular motion, to secure a smooth, filled, clean surface with filler remaining in open grain only. After overnight dry, sand surface with the grain until smooth before applying specified coat.

B. Scheduling Painting

1. Apply the first coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

2. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

C. Prime Coats: Re-coat primed and sealed walls and ceilings where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

D. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage.

E. “Touching-Up” of Factory Finishes: Unless otherwise specified or shown, materials with a factory finish shall not be painted at the project site. To “touch-up,” the Contractor shall use the factory finished material manufacturer’s recommended paint materials to repair abraded, chipped, or otherwise defective surfaces.

3.6 PROTECTION

A. Protect work of other trades, whether to be painted or not, against damage by the painting and finishing work. Leave all such work undamaged. Correct any damages by cleaning, repairing or replacing, and repainting, as acceptable to the Architect.

B. Provide "Wet Paint" signs as required to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

3.7 CLEAN UP

A. During the progress of the work, remove from the site all discarded paint materials, rubbish, cans and rags at the end of each work day.

B. Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

C. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

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.

B. Related Sections include the following:

1. Division 26 Section "Lighting Control Devices" for automatic control of lighting, including time switches, photoelectric relays, occupancy sensors, and multiple lighting relays and contactors.

1.3 DEFINITIONS

A. BF: Ballast factor.

B. CRI: Color-rendering index.

C. CU: Coefcient of utilization.

D. HID: High-intensity discharge.

E. LER: Luminaire efficacy rating.

F. Luminaire: Complete lighting fixture, including ballast, housing if provided.

G. RCR: Room cavity ratio.

H. THD: Total Harmonic Distortion

1.4 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. Manufacturer, life, output, and energy-effieciency data for lamps.
6. Photometric data, in IES 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.

    a. For indicated fixtures, photometric data shall be certified by a qualified independent testing agency. Photometric data for remaining fixtures shall be certified by the manufacturer.
    b. Photometric data shall be certified by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program (NVLAP) for Energy EfFcient Lighting Products.

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 and control wiring.

C. Coordination Drawings: Reflected ceiling plan(s) and other details, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:

1. Lighting fixtures.
2. Suspended ceiling components.
3. Structural members to which suspension systems for lighting fixtures will be attached.
4. Other items in finished ceiling including the following:

    a. Air outlets and inlets.
    b. Speakers.
    c. Sprinklers.
    d. Smoke and fire detectors.
    e. Occupancy sensors.
    f. Access panels.
    g. Security cameras.

5. Perimeter moldings.

D. Samples for Verification: Interior lighting fixtures designated for sample submission in Interior Lighting Fixture Schedule. Each sample shall include the following:

1. Lamps: Specified units installed.
2. Accessories: Cords and plugs, 120 volts.

E. Product Certificates: For each type of ballast for bi-level and dimmer-controlled fixtures, signed by product manufacturer.

F. Qualification Data: For agencies providing photometric data for lighting fixtures.

G. Field quality-control test reports.

H. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.

I. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.

B. 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. Provide IES formatted photometric data for any substitutions.

C. 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.

D. Comply with NFPA 70.

E. FMG Compliance: Lighting fixtures for hazardous locations shall be listed and labeled for indicated class and division of hazard by FMG.

F. Mockups: Provide interior lighting fixtures for room or module mockups, complete with power and control connections, as indicated by Architect, Section 088413.

1. Obtain Architect's approval of fixtures for mockups before starting installations.
2. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
3. Approved fixtures in mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 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.

1.7 WARRANTY

A. 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: 15 years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining fourteen 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.

B. 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.
2. Warranty Period for Electromagnetic Ballasts: Three years from date of Substantial Completion.

C. Special Warranty for T5 and T8 Fluorescent Lamps: Manufacturer's standard form, made out to Owner and signed by lamp manufacturer agreeing to replace lamps that fail in materials or workmanship, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.

1. Warranty Period: One year(s) from date of Substantial Completion.

1.8 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: One for every 40 of each type and rating installed. Furnish at least one of each type.
2. Plastic Diffusers and Lenses: One for every 30 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: One for every 30 of each type and rating installed. Furnish at least one of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Refer to Lighting Product Descriptions at the end of this Section

B. Lighting Fixture Schedule. See product cutsheets and information at the end of this section.

LIGHTING FIXTURE SCHEDULE

FIXTURE	MANUFACTURER AND MODEL	LAMP INFO	COLOR INFO	CUT OUT
A	WAC Aether 3.5" 0°-30° Adjustable Trim Square; R3ASAT-F830-HZWT Trim And HR-3LED-H17A IC Rated Housing.	15.5W 3K LED	Haze/White	4 5/8"
B	WAC 2-Light 4" LED Precision Multiples; MT-4LD216T-WT Trim And MT-4LD211NE-F-930-BK ELV Dimming IC Rated Housing.	2x 23W 3K LEDs	White/Black	9 3/4" x 5 1/8"
C	WAC Exterminator II Monopoint Luminaire; MO-1014F-930-BK	14W 3K LED	Black	--na--
D	Chauvet DJ SlimPAR T6BT RGB Wash Light (14 Total Fixtures); Provide Hardware as Req. to Mount to Square Tubing Behind T14 Panels; Refer to E Series Drawings for DMX Control	6x 2.5W RGB LEDs	Black	--na--
S1	PLT 2835-60-IP65-WW2450NHC 3K 24V 90CRI LED Tape Light (≈3') Mounted in KLUS LIPOD Channel with LIGER-22 Frosted Cover. Magnitude M40L24DC-AR Dimmable LED Driver.	3.5W/ft. 3K LEDs	--na--	--na--
S2	PLT 2835-60-IP65-WW2450NHC 3K 24V 90CRI LED Tape Light (≈14' Total) With Magnitude M60L24DC-AR Dimmable LED Driver.	3.5W/ft. 3K LEDs	--na--	--na--
S3	PLT 5050-60-IP65-RGB2450 Nano RGB 24V 90CRI LED Tape Light (≈50' Total) Mounted in KLUS MICRO-ALU Channel With Mean Well LRS-350-24 Power Supply; Refer to E Series Drawings for Controls.	4.5W/ft. RGB LEDs	--na--	--na--
S4	PLT 2835-60-IP65-WW2450NHC 3K 24V 90CRI LED Tape Light (≈26' Total) Mounted in KLUS LIPOD Channel with LIGER-22 Frosted Cover. Magnitude M150L24DC-AR Dimmable LED Driver.	3.5W/ft. 3K LEDs	--na--	--na--

C. In Interior Lighting Fixture Schedule where titles below are column or row headings that introduce lists, the following requirements apply to product selection:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 Basis-of-Design Product: The design for each lighting fixture is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified

2.3 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS

A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.

B. Metal Parts: Free of burrs and sharp corners and edges.

C. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.

D. 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.

E. 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.
4. Laminated Silver Metallized Film: 90 percent.

F. 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 minimum unless different thickness is indicated.
b. UV stabilized.

2. Glass: Annealed crystal glass, unless otherwise indicated.

G. Electromagnetic-Interference Filters: Factory installed to suppress conducted electromagnetic-interference as required by MIL-STD-461E. Fabricate lighting fixtures with one filter on each ballast indicated to require a filter.

1. Transient Voltage Protection: IEEE C62.41, Category A or better.
2. Lamp Current Crest Factor: 1.5 or less.
3. Power Factor: .90 or higher.
4. Interference: Comply with 47 CFR, Chapter 1, Part 18, Subpart C, for limitations on electromagnetic and radio-frequency interference for non-consumer equipment.
5. Protection: Class P thermal cutout.

6. Retain subparagraph and associated subparagraphs below for bi-level ballasts.

2.4 EXIT SIGNS

A. Fixture Type Exit Sign:
   1. Basis-of-Design Product:
      a. Manufacturer:
         1) Cooper Lighting Surelites
            a) Model # ES7-1-70-R/R-WH-R-x-277V-x
      b. Alternate Manufacturers:
         1) Acuity Lighting
         2) Prescolite
   2. Description: Recessed ceiling mounted exit sign with housing to be 18-gauge steel with conduit knockouts. Adjustable hanger bars - Connectors facilitate quick installation and maintenance - Convenient 1/2" knockouts provided in top and end of surface mounted housing Trim/Housing Plate - Injection molded high-impact acrylic panel - NFPA 101 compliant chevron directional indicators (to be coordinated by Contractor). Extruded trim plate in White with red 8". To have torsion springs to secure trim plate to housing - no visible mounting hardware.
      a. Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.
      b. Lamps for AC Operation: LEDs, 70,000 hours minimum rated lamp life.
      c. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
         1) Battery: Sealed, maintenance-free, nickel-cadmium type.
         2) Charger: Fully automatic, solid-state type with sealed transfer relay.
         3) 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.
         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) Remote Test: Switch in hand-held remote device aimed in direction of tested unit initiates coded infrared signal. Signal reception by factory-installed infrared receiver in tested unit triggers simulation of loss of its normal power supply, providing visual confirmation of either proper or failed emergency response.
         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.

2.5 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. Wire Guard: Heavy-chrome-plated wire guard protects lamp heads or fixtures.
7. Integral Time-Delay Relay: Holds unit on for fixed interval of 15 minutes when power is restored after an outage.
8. Remote Test: Switch in hand-held remote device aimed in direction of tested unit initiates coded infrared signal. Signal reception by factory-installed infrared receiver in tested unit triggers simulation of loss of its normal power supply, providing visual confirmation of either proper or failed emergency response.
9. 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.

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. Support Clips: Fasten to lighting fixtures and to ceiling grid members at or near each fixture corner with clips that are UL listed for the application.
3. 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.
4. Install at least one independent support rod or wire from structure to a tab on lighting fixture. Wire or rod shall have breaking strength of the weight of fixture at a safety factor of 3.

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. Air-Handling Lighting Fixtures: Install with dampers closed and ready for adjustment.

E. Adjust aimable lighting fixtures to provide required light intensities.

F. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

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.

3.3 GENERAL

A. Fixture locations as indicated on the Electrical Drawings are generalized and approximate. Carefully verify locations with Architect's plans, reflected ceiling plans and other reference data, prior to installation. Check for adequacy of headroom and non-interference with other equipment, such as ducts, pipes, conduit, or openings. Bring conflicts to Architect's/Engineer's attention before proceeding with work.

B. Although the location of equipment may be shown on the Contract Drawings in certain places, actual construction may disclose that the work does not make its position easily and quickly accessible. In such cases, call Architect's/Lighting Designer's attention to this situation before installing this work, and comply with the installation instructions.

C. Lamp disposal shall be provided by the Contractor following all rules/guidelines set by SUNY Purchase.

D. Verify ceiling conditions and ceiling types. Furnish appropriate luminaire mounting accessories for each fixture. Architect/Lighting Designer shall accept such mounting details.

E. Install fixtures in mechanical areas after ductwork and piping installation. Locate and mount fixtures as indicated on Drawings unless mechanical equipment prohibits or makes it impractical to do so. In such cases, chain or wall mounted fixtures so that serviceable equipment is illuminated.

F. Install fixtures complete with lamps, as indicated, and with equipment, materials, parts, attachments, devices, hardware, hangers, cables, supports, channels, frames and brackets necessary to make a safe, complete, and fully operative installation.

G. Verify and provide fixtures that are appropriate for the ceiling mounting conditions of the project.

H. Reject and do not install blemished, damaged or unsatisfactory fixtures. Replace imperfect or unsatisfactory fixtures, if installed, as directed by the Architect/Lighting Designer.

I. When installed, fixture shall be free of light leaks, warps, dents, or other irregularities. No light leaks are permitted at the ceiling line or from any visible part or joint of the fixtures.

J. Provide finish for exposed parts or trims as specified or indicated on the Drawings. If finish for exposed parts is not indicated, provide a finish as directed by the Architect/Lighting Designer.

K. Do not install reflector cones, aperture plates, lenses, diffusers, louvers, and decorative elements of fixtures until completion of wet work, plastering, painting and general clean-up in the area of the fixtures.

L. Mount fixtures at heights and locations indicated on the Contract Drawings, or as requested by Architect/Lighting Designer.

M. Adequately protect the housing of recessed lighting fixtures during installation by internal blocking or framing to prevent distortion of sides, or dislocation of threaded lugs, which, upon completion, shall be in perfect alignment and match the corresponding holes in frames and rims. Holding screws shall be inserted freely without forcing, and shall remain easily removable for servicing. Threads intended to receive holding screws shall be chased after plating and finished to insure easy installation and removal of knurled headed screws.

N. Parabolic luminaires shall be installed with mylar cover over louvers; cover shall be U.L. listed for temporary lighting. Upon completion of work, remove mylar cover with white gloves.

0. Fixture supports shall be adequate to support the weight of the fixtures.

P. Provide visible hanging devices that are finished to match the fixture finish, unless indicated otherwise.

Q. Where necessary to meet fire resistance requirements of Building Code authorities, provide enclosure housings for recessed fixtures that are constructed to provide required fire resistance rating.

R. Provide attachment devices, including brackets, plaster rings, saddle hanger and tie bars, made of formed, rolled, or cast metal shapes with the requisite rigidity and strength to maintain continuous alignment of installed fixtures. Attach fixtures to ceiling supporting members, and do not depend upon lathing, plaster or ceiling tile for alignment or support.

S. Provide fixtures mounted in suspended ceilings that are supported by saddle hangers or the bars attached to runners or between crossbars of ceiling systems. Provide mounting splines or other positive means of maintaining alignment and rigidity.

T. Provide pendant or surface mounted fixtures with required mounting devices and accessories, including hickeys, stud-extensions, ball aligners, canopies, and stems. Make mounting stems of pendant fixtures of the correct length to uniformly maintain the fixture heights shown on the Contract Documents or established in the field. The allowable tolerance in mounting individual fixtures shall not exceed 1‹ inch and may not vary more than / inch from the floor mounting height shown on the Drawings. Install fixtures hung in continuous runs absolutely level, and in line with each other. Hanging devices shall comply with code requirements.

U. Provide hanging devices, which, if visible from normal viewing angles, exactly match fixture finishes, unless otherwise requested by the Architect/Lighting Designer.

v. Place stems to be vertical.

w. Fixtures shall be secured to the steel outlet box where used. Where additional support is needed for fixtures on suspended ceilings, a steel support framework shall be used. Fixtures and appliances shall not be supported by or attached to ceiling tiles, sheet rock, or plaster.

X. All light fixtures shall be connected to the branch circuit wiring system by means of a flexible connection. Each fixture shall be served by a single flexible connection from a junction box in the branch circuit raceway system. “Daisy Chain” connections from fixture to fixture shall only by allowed in spaces above hard ceiling and under no circumstances shall more than two cables be installed into a single fixture connection box.

3.4 ACCESSIBILITY

A. Install equipment such as junction and pull boxes, fixture housings, transformers, ballasts, switches and controls, and other apparatus that requires occasional access for operation and maintenance, to be easily accessible and appropriate for mounting and ceiling conditions.

HR-3LED-H17A/HR-3LED-H17AC

3.5" Aether Shallow Housing
IC-Rated - Airtight

WAC LIGHTING
Responsible Lighting®

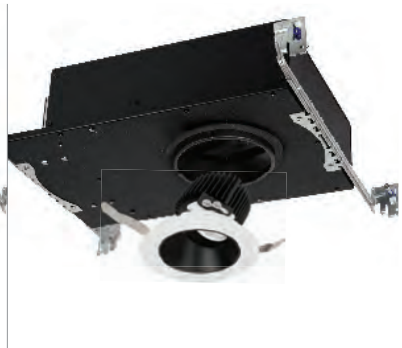
Fixture Type: A

Catalog Number:

Project:

Location:

Downlight and Invisible Trim



Adjustable and wall wash Trim

PRODUCT DESCRIPTION

For use with 3.5" Aether series trims. IC-Rated and airtight.

FEATURES

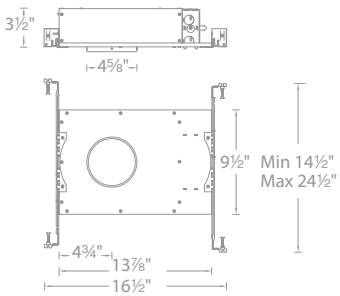
- IC rated shallow plenum family
- Compatible with trim, or round/square trimless, adjustable, wall wash
- 5 year WAC Lighting Product Warranty

SPECIFICATIONS

Construction: Powder coated finish on metal sheet
Dimming: 100% - 0% with 0 - 10V dimmer (120V - 277V)
100% - 5% with Electronic Low Voltage (ELV) dimmer (120V only)
Input: 120V-277V AC
Cutout: 4 5/8"
Mounting: Retention clips firmly hold trim to housing.
Finish: Black (Black) powder coat paint.
Standards: ETL & cETL Listed, Airtight
Ceiling thickness: ½" - 1½"

HOUSING

Shown with open square white trim



Model	
HR-3LED-H17A	*New Construction IC-rated, Airtight*
HR-3LED-H17AC	*New Construction IC-rated, Airtight Chicago Plenum*

HR-3LED-H17____

Example: **HR-3LED-H17A**

waclighting.com
Phone (800) 526.2588
Fax (800) 526.2585

Headquarters/Eastern Distribution Center
44 Harbor Park Drive
Port Washington, NY 11050

Central Distribution Center
1600 Distribution Ct
Lithia Springs, GA 30122

Western Distribution Center
1750 Archibald Avenue
Ontario, CA 91760

MT-4LD2 - 2 Light

4" LED Precision Multiples Energy Star®

WAC LIGHTING
Responsible Lighting®

Fixture Type:

Catalog Number: B

Project:

Location:

PRODUCT DESCRIPTION

Retractable, adjustable spot lights

FEATURES

- ELV and 0-10V dimming options
- Energy Star® rated
- Invisible Trim™ is designed to sit flush with the ceiling for a clean, architectural look
- Fully retractable from housing
- 365° horizontal rotation and 180° vertical aiming
- Accepts 1 replacement lens
- 50,000 hour rated life
- 5 year WAC Lighting product warranty

SPECIFICATIONS

Construction: Die-cast aluminum heat sink painted black. Trim, housing and junction box are 20 gauge steel. Frame and hanger bars are heavy gauge galvanized steel.

J-Box: Seven knockouts and four Romex® style wiring connectors provided for ease of installation. Rated for branch wiring.

Driver: Universal (120V - 277V) or 120V input only

Light Source: High output LED (included with housing)

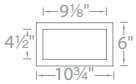
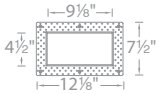
Dimming: 0-10V or ELV (see list of housings below)

Mounting: Supplied with hanger bars, adjustable from 14½"-25" to accommodate various joist construction and grid sizes. Hanger bars include a captive mounting "screw-nail" for ease of installation. Accommodates surface up to 1" thick. 9¾" × 5⅛" cutout with trim, 9¾" × 5⅛" cutout for Invisible Trim™. See instruction sheet for details on installation using spackle ring.

Finish: Abrasion resistant powder coat paint in Black (BK).

Standards: ETL & cETL Damp Location listed

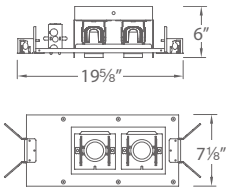
TRIMS

		**MT-4LD216T** *Trim*	**WT** *White* **BK** *Black*
		**MT-4LD216TL** *Invisible Trim™*	**WT** *White*

[ ] – [ ]

Example: **MT-4LD216T-BK**

HOUSINGS

		Power	Beam	Color Temp	CRI	Interior
	**MT-4LD216N** *0-10V dimming* *Non-IC, 120V-277V input*	*33W*	**S** *20°* **F** *40°*	**27** *2700K* **927** *2700K* **30** *3000K* **930** *3000K* **35** *3500K* **40** *4000K*	*85* *90* *85* *90* *85* *85*	**BK** *Black*
	MT4LD216NE *ELV dimming* *Non-IC, 120V input*	*33W*				
	MT4LD211NE *ELV dimming* *IC-Rated, 120V input*	*23W*				

[ ] – [ ] [ ] – **BK**

Example: **MT-4LD216NE-S927-BK**

REPLACEMENT LENS

Amber	**LENS-16-AMB**
Blue	**LENS-16-BLU**
Green	**LENS-16-GRN**
Red	**LENS-16-RED**
Yellow	**LENS-16-YEL**

UV Filter	**LENS-16-UVF**
Frosted	**LENS-16-FR**
Spread	**LENS-16-SPR**
Beam Elongator	**LENS-16-BEL**

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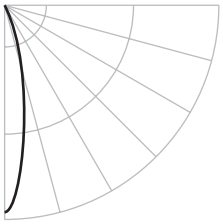
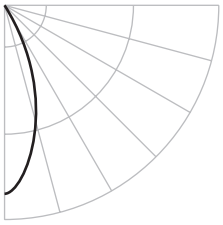
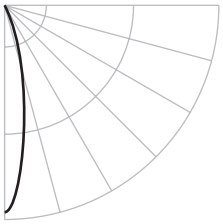
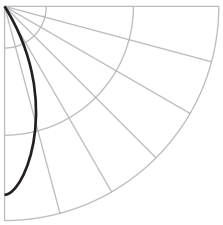
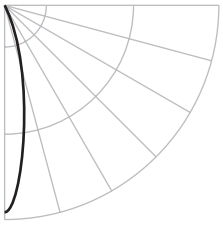
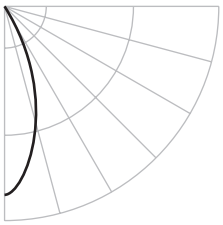
MT-4LD2 - 2 Light

4" LED Precision Multiples Energy Star®

WAC LIGHTING
Responsible Lighting®

B

LUMINAIRE PERFORMANCE	Power	Beam	Photometry	Color Temp	CRI	Lumen	CBCP
MT-4LD216N *0-10V dimming* *Non-IC, 120V-277V input*	*16.5W*	**S** *20°*		**27** *2700K*	*85*	*1840*	*4490 x 2*
				927 *2700K*	*90*	*1580*	*3605 x 2*
				30 *3000K*	*85*	*1920*	*4790 x 2*
				930 *3000K*	*90*	*1630*	*3910 x 2*
				35 *3500K*	*85*	*1950*	*4720 x 2*
				40 *4000K*	*85*	*2200*	*5370 x 2*
		F *40°*		**27** *2700K*	*85*	*1810*	*2015 x 2*
				927 *2700K*	*90*	*1570*	*1615 x 2*
				30 *3000K*	*85*	*1880*	*2090 x 2*
				930 *3000K*	*90*	*1600*	*1705 x 2*
				35 *3500K*	*85*	*1920*	*2110 x 2*
				40 *4000K*	*85*	*2160*	*2390 x 2*
MT4LD216NE *ELV dimming* *Non-IC, 120V input*	*16.5W*	**S** *20°*		**27** *2700K*	*85*	*1870*	*4506 x 2*
				927 *2700K*	*90*	*1520*	*3545 x 2*
				30 *3000K*	*85*	*1944*	*4630 x 2*
				930 *3000K*	*90*	*1780*	*4170 x 2*
				35 *3500K*	*85*	*2010*	*4700 x 2*
				40 *4000K*	*85*	*1970*	*4700 x 2*
		F *40°*		**27** *2700K*	*85*	*1920*	*1955 x 2*
				927 *2700K*	*90*	*1500*	*1605 x 2*
				30 *3000K*	*85*	*1960*	*2110 x 2*
				930 *3000K*	*90*	*1800*	*1890 x 2*
				35 *3500K*	*85*	*1980*	*2095 x 2*
				40 *4000K*	*85*	*1970*	*2115 x 2*
MT4LD211NE *ELV dimming* *IC-Rated, 120V input*	*11.5W*	**S** *20°*		**27** *2700K*	*85*	*1530*	*3315 x 2*
				927 *2700K*	*90*	*1256*	*2685 x 2*
				30 *3000K*	*85*	*1566*	*3575 x 2*
				930 *3000K*	*90*	*1270*	*2795 x 2*
				35 *3500K*	*85*	*1604*	*3550 x 2*
				40 *4000K*	*85*	*1786*	*3925 x 2*
		F *40°*		**27** *2700K*	*85*	*1528*	*1670 x 2*
				927 *2700K*	*90*	*1226*	*1270 x 2*
				30 *3000K*	*85*	*1534*	*1590 x 2*
				930 *3000K*	*90*	*1248*	*1295 x 2*
				35 *3500K*	*85*	*1574*	*1640 x 2*
				40 *4000K*	*85*	*1768*	*1820 x 2*

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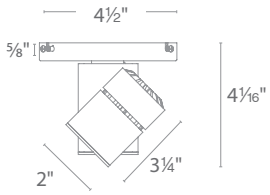
EXTERMINATOR II - model: MO-1014

Monopoint Luminaire

WAC LIGHTING
Responsible Lighting®



Fixture Type: C

Catalog Number:

Project:

Location:

PRODUCT DESCRIPTION

Museum-quality LED luminaire with high performance optics

FEATURES

- Accommodates 1 filter lens or 1 accessory
- 365° horizontal rotation and 180° vertical aiming
- Ceiling and wall mountable
- 50,000 hour rated life
- 5 year WAC Lighting product warranty

SPECIFICATIONS

Construction: Die-cast aluminum with removable front cap for easy change of lenses or accessories

Power Consumption: 14W

Input: 120V AC 50/60HZ

Dimming: Electronic low voltage (ELV) dimmer 100%-5% (120V only)

Finish: Powder coated

Standards: UL & cUL Damp Location Listed.

ORDER NUMBER

Model	Beam	Color Temp	CRI	Lumens	CBCP	Finish
MO-1014 *14W*	**N** *20°*	**827** *2700K*	*85*	*860*	*4752*	**BN** *Brushed Nickel*
		927 *2700K*	*90*	*627*	*3520*	**BK** *Black*
		830 *3000K*	*85*	*872*	*4826*	**WT** *White*
		930 *3000K*	*90*	*677*	*3640*	
		835 *3500K*	*85*	*912*	*4597*	
		840 *4000K*	*85*	*965*	*4585*	
	F *40°*	**827** *2700K*	*85*	*852*	*1844*	**BN** *Brushed Nickel*
		927 *2700K*	*90*	*624*	*1357*	**BK** *Black*
		830 *3000K*	*85*	*857*	*1955*	**WT** *White*
		930 *3000K*	*90*	*663*	*1468*	
		835 *3500K*	*85*	*917*	*2001*	
		840 *4000K*	*85*	*980*	*2117*	

MO-1014__-_____-____

Example: **MO-1014N-927-WT**

Accommodates one lens accessory and one glare control accessory

LENS ACCESSORIES

Amber	**LENS-11-AMB**
Blue	**LENS-11-BLU**
Green	**LENS-11-GRN**
Red	**LENS-11-RED**
Frosted	**LENS-11-FR**
Spread	**LENS-11-SPR**
Beam Elongating	**LENS-11-BEL**

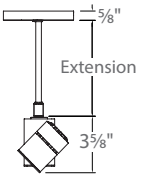
GLARE CONTROL ACCESSORIES

Cross Louver	**LENS-11P-CRL**	**BN** **BK** **WT**
Snoot	**LENS-11-SNOOT**	

REFLECTORS

20°	**SL-REF-CXA1310-N**
40°	**SL-REF-CXA1310-F**

EXTENSIONS Custom order as a complete unit. Ceiling mount only.

X6 *6"*	**MO1014**	**N**	**827**	**BN**	
X12 *12"*		**F**	**830**	**BK**	
X18 *18"*			**835**	**WT**	
X24 *24"*			**840**		
X36 *36"*			**927**		
X48 *48"*			**930**		

Example: X12-MO1014N930WT

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Magnitude Lighting Converters

M40L24DC-AR 40W

Indoor & Outdoor Dimmable Lighting Converter

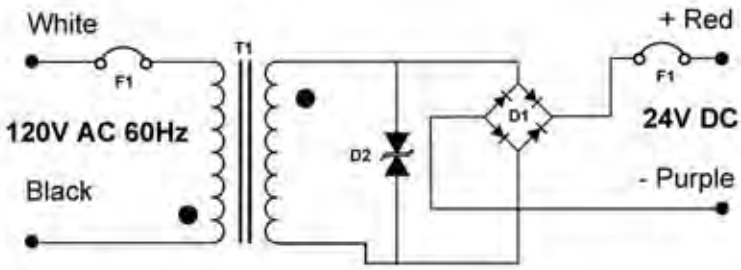
S1

Magnitude's M40L24DC-AR is the most compact LED driver on the market with a magnetic transformer core. It is equipped with auto-reset breakers, one on the input and one on the output, which protect both the load and driver. The driver is encased in a coated metal box that includes 2 knock-outs, one on each side, to enable easy installation that **complies with electrical code** requirements.

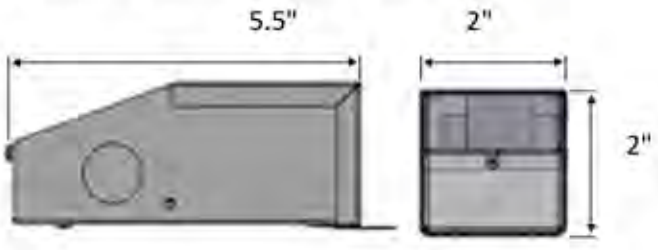
Features

- Two auto-reset circuit breakers
- Dimmable with magnetic low-voltage dimmers
- ETL listed
- CSA listed
- Class 2

Max Load	40 W
Input Voltage	120 V 60Hz
Input Current Full Load on I	410mA
Output Voltage Full Load on I	21.1V
Max Output Current Full Load on I	1.72A
Open Circuit Output Voltage on I	24.3V
Efficiency on I	80%
Power Factor on I	0.89
Coil Former	Double Section Bobbin
Thermal Class	B130°C
Leads Primary	PVC 600V #20
Leads Secondary	PVC 300V#16
Height	5.5"
Width	2"
Depth	2"
Weight	35 Oz.



Dimensions are in inches



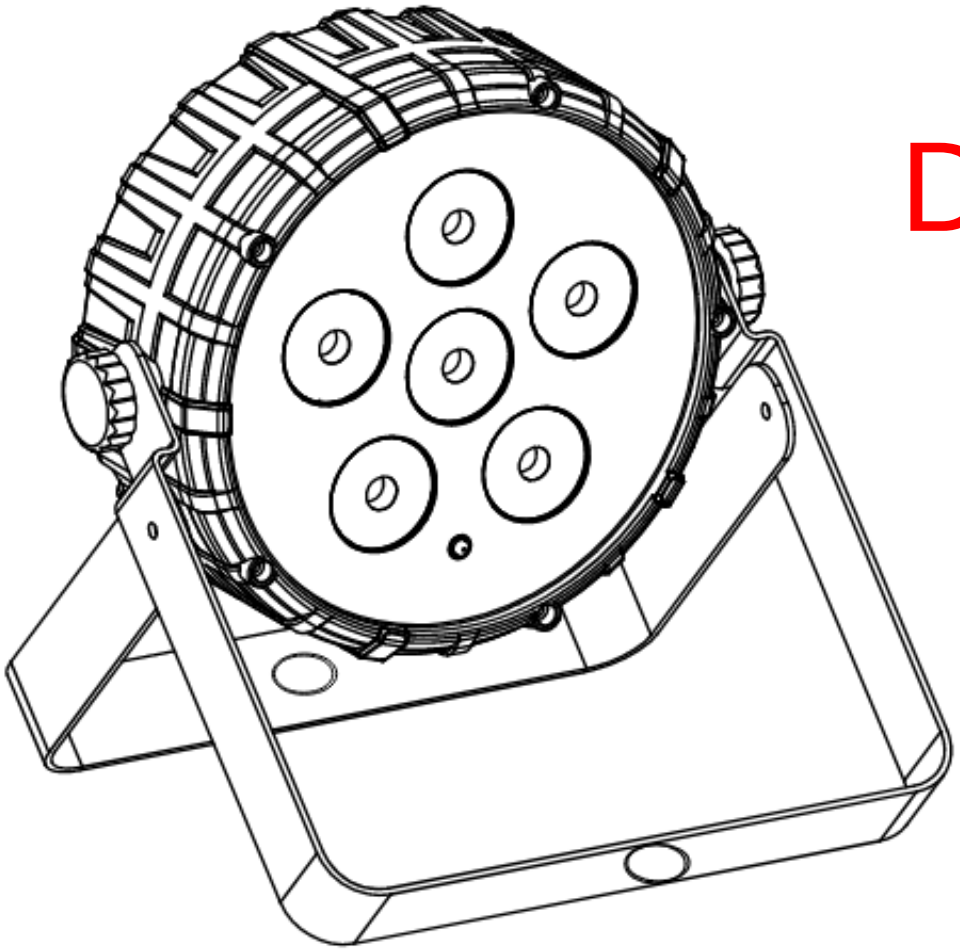
Phone: 818-988-2122 Fax: 818-755-4025 | 14711 Bentley Circle, Unit B Tustin, CA 92780
info@magnitudeinc.com | www.magnitudeinc.com

SlimPAR T6BT

Quick Reference Guide

Scan to download BTAir App

D



CHAUVET DJ

About This Guide

The SlimPAR T6BT Quick Reference Guide (QRG) has basic product information such as mounting, menu options, and DMX values. Download the User Manual from www.chauvetdj.com for more details. Patent pending.

Disclaimer

The information and specifications contained in this QRG are subject to change without notice.

D

LIMITED WARRANTY

FOR WARRANTY REGISTRATION AND COMPLETE TERMS AND CONDITIONS PLEASE VISIT OUR WEBSITE.

For Customers in the United States and Mexico: www.chauvetlighting.com/warranty-registration

For Customers in the United Kingdom, Republic of Ireland, Belgium, the Netherlands, Luxembourg, France, and Germany: www.chauvetlighting.eu/warranty-registration/

Chauvet warrants that this product shall be free from defects in material and workmanship under normal use, for the period specified in and subject to the exclusions and limitations set forth in, the full limited warranty on our website. This warranty extends only to the original purchaser of the product and is not transferable. To exercise rights under this warranty, you must provide proof of purchase in the form of an original sales receipt from an authorized dealer that shows the product name and date of purchase. THERE ARE NO OTHER EXPRESS OR IMPLIED WARRANTIES. This warranty gives you specific legal rights. You may also have other rights that vary from state to state and country to country. This warranty is valid only in the United States, United Kingdom, Republic of Ireland, Belgium, the Netherlands, Luxembourg, France, Germany and Mexico. For warranty terms in other countries, please consult your local distributor.

Safety Notes

These Safety Notes include important information about installation, use, and maintenance.

- Always connect the product to a grounded circuit.
- Make sure the power cord is not crimped or damaged.
- Always disconnect the product from the power source before cleaning it or replacing the fuse.
- Never disconnect the product from the power source by pulling or tugging on the cord.
- If mounting the product overhead, make sure there is adequate support for the product's weight and always secure the product using a safety cable.
- Make sure there are no flammable materials close to the product when it is operating.
- Avoid direct eye exposure to the light source while the product is on.
- Do not touch the product's housing when the product is operating because the housing can be very hot.

- The product is not intended for permanent installation.
- The product is for indoor use only. It is rated at IP20.
- Do not expose the product to rain or moisture.
- Always connect the product to a power source that is within the voltage range stated on the label or rear panel of the product.
- Never connect the product to a dimmer or rheostat.
- Make sure to replace the fuse with another of the same type and rating.
- Always install the product in a location with adequate ventilation.
- Always leave at least 20 in (50 cm) between the product and adjacent surfaces.
- Be sure that no ventilation slots on the product's housing are blocked.
- Do not operate the product at an ambient temperature higher than 104 °F (40 °C).
- Never carry the product by the power cord or any moving part.
- Always use the mounting/hanging bracket to lift the product.
- If there is a serious operating problem, stop using the product immediately.
- Never try to repair the product. Repairs carried out by untrained people can lead to damage or malfunction.
- To eliminate wear and improve its lifespan, during periods of non-use completely disconnect from power via breaker or by unplugging it.

FCC Compliance

This device complies with Part 15 Part B of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Valores DMX

7Ch

Canal	Función	Valor	Porcentaje/Configuración
1	Rojo	000 ⇔ 255	0–100%
2	Verde	000 ⇔ 255	0–100%
3	Azul	000 ⇔ 255	0–100%
4	Estroboscopio	000 ⇔ 255	Estroboscopio, lento a rápido
5	Velocidad del programa	000 ⇔ 005	Sin función
		006 ⇔ 055	Programas automático 1
		056 ⇔ 106	Programas automático 2
		107 ⇔ 157	Programas automático 3
		158 ⇔ 208	Programas automático 4
		209 ⇔ 255	Programas automático 5
6	Velocidad del programa	000 ⇔ 250	Velocidad, lenta a rápida
		251 ⇔ 255	Modo activo por sonido
7	Atenuador	000 ⇔ 255	0–100%

3Ch

Canal	Función	Valor	Porcentaje/Configuración
1	Rojo	000 ⇔ 255	0–100%
2	Verde	000 ⇔ 255	0–100%
3	Azul	000 ⇔ 255	0–100%

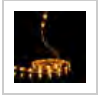
PLT SOLUTIONS

16 ft. - 3000K Warm - LED - High CRI 90 - LED Tape Light - Dimmable - 24 Volt

3M Taped Backing - Constant Voltage LED Driver and Power Connector Cord Sold Separately

4.3 (4) Write a review Ask a question

S1,S2,S4


$47.99 ea.

S1,S2,S4

DETAILS REVIEWS FAQ'S

Description

Add this PLT 2835-60-**IP65** -WW2450NHC LED strip light to areas that color purity of the objects it illuminates. Featuring 288 LEDs and 3M adhesive backing, this 16 foot tape light spool is perfect for under-cabinet lighting, back lighting, or other indoor applications where space is limited.

- A 24 volt Constant Voltage LED driver and power connector cord is required
- Parylene Nano coating, completely transparent and weather resistant
- **IP65** rated, resistant to dust, solid objects, and moisture
- Cuttable at 4-inch increments noted on tape light
- See accessories for compatible dimmers
- Includes one end cap
- High **CRI** of 90

Brochures & Spec Sheets

PLT 2835-60-IP65-WW2450NHC IP Rating Chart (https://a89b8e4143ca50438f09-7c1706ba3fabeeda794725d88e4f5e57.ssl.cf2.rackcdn.com/spec_sheets/files/000/078/325/original/plt-2835-60-ip65-ww2450nhc-ip-rating.pdf?1605623540)

Product Attributes

Brand	PLT Solutions
MPN (Part No.)	2835-60-**IP65** -WW2450NHC
Dimmable	Yes
CRI	90
Color	Warm White
Color Temperature	**3000 Kelvin**
Life Hours	25,000
Lumens Per Foot	260
Voltage	24
Ratings and Certifications	**CE Certified** /**IP65** /**UL** Indoor

Bulbs Per Foot	18

Coating	Parylene Nano
Cutting Intervals	4 in.
Lighting Technology	LED
Maximum Run	16 ft.
Watts Per Foot	3.5
Length Ft	16 ft.
Height	0.1 in.
Width	0.44 in.
Warranty	2 Years
Case Quantity	10

S1,S2,S4

Additional Videos

PRODUCT DESCRIPTION

S1,S4

Architectural extrusions for LED tape – dedicated to be mounted into ceilings and drywall.

Patent Number: US D724,259S

Fixture Certified to NSF 2 standards when assembled by KLUS

Closet Rated

- Ability to create a line of light
- Easy mounting using various techniques
- Can be combined in straight and broken linear runs
- Designed to reach an IP65 waterproof rating

FINISH :

Silver anodized ☐
Black ■
White ☐

Fill empty fields

Product nr.	
Fixture type	
Company	
Job name	
Date	

TECHNICAL SPECIFICATION

Application

- surface mounted or suspended lighting fixtures

Mounting

- using surface springs,
- using suspension accessories,
- using mounting adhesive.

MAGNITUDE
Lighting Converters

Specification Sheet

Dimmable | 24V DC | Class 2 | ETL

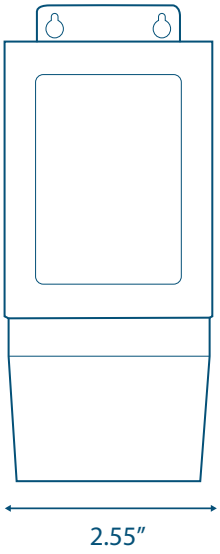
LED Driver

S2

Indoor & Outdoor Magnetic Dimmable Class 2 LED Driver

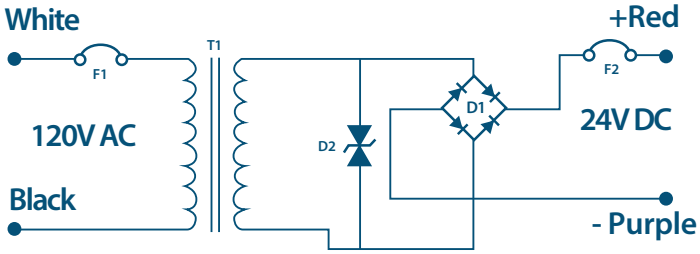
Product Code: M60L24DC-AR

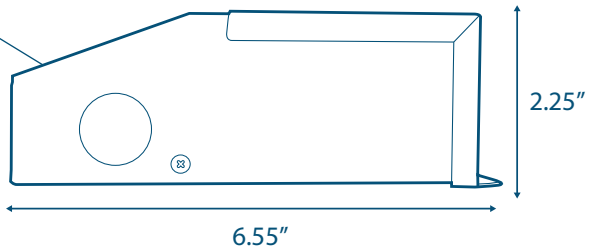
Magnitude's M60L24DC-AR is the most compact LED driver on the market with a magnetic transformer core. It is equipped with auto-reset breakers, one on the input and one on the output, which protect both the load and driver. The driver is encased in a coated metal box that includes 2 knock-outs, one on each side, to enable easy installation that complies with electrical code requirements.



Features

Two knock-outs one on each side
Dual protection
Two auto-reset circuit breakers
Dimmable with most quality Magnetic Low-Voltage dimmers
ETL Listed
CSA Listed
Class 2
Nema 3R Enclosure - Outdoor Use





Driver's Specifications

Max Load	60W
Input Voltage	120V AC
Input Current Full Load	0.95 A
Output Voltage Full Load	21.8V DC
Max Output Current Full Load	2.56 A
Open Circuit Output Voltage	23.6V DC
Efficiency on I	84%
Power Factor on I	0.82
Coil Former	Double Section Bobbin
Thermal Class	B130°c
Leads Primary	PVC 600V #20
Leads Secondary	PVC 300V #14
Dimensions L*W*H	6.55 in. x 2.25 in. x 2.55 in. (166.3 mm x 57.15 mm x 64.7 mm)
Weight	50 Oz.

The specifications are subject to change without notice

S1,S4

Additional information

- ability to construct polygonal fixtures using ZM connectors

Architectural extrusions for LED tape - dedicated to be mounted into ceilings and drywall. The height of the extrusion was designed to produce a single line of light with LEDs spaced 15 mm (0.59") apart and a frosted cover HS 22. The extrusion can accomodate two of the 10 mm (0.39") wide LED strips. Extrusion can be mounted to a surface with the use of mounting springs.

Extrusion bending

Minimum internal radius	Minimum external radius
3000 mm / 118.1"	3000 mm / 118.1"

- minimum radius – bending radius which when exceeded causes destruction, (deformation, bending or lack of compatibility with other accessories, e.g. covers, end caps, etc.) of the profile,
- internal radius – refers to the extrusion bent so that the cover is facing the inside of the arch,
- external radius - refers to the extrusion bent so that the cover is facing the outside of the arch,
- irregular curves are possible after consultation and individual quotation,
- when bending anodized extrusions, one should be aware of cracking of the anode coating (which may be more or less visible depending on the radius).

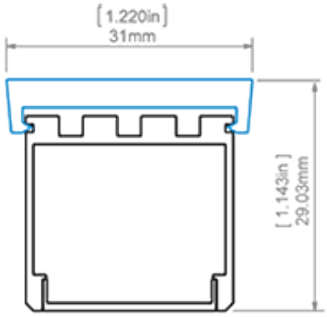
Possibility of making a linear fixture with IP64 protection, which means the fixture is dustproof and splashproof. Achieving IP64 is possible with the following covers: LIGER-22, MUN-22 and HS-22.

Turn off LED lights during peak day light hours in outdoor applications to avoid excessive heat buildup which will result in diminished LED life.

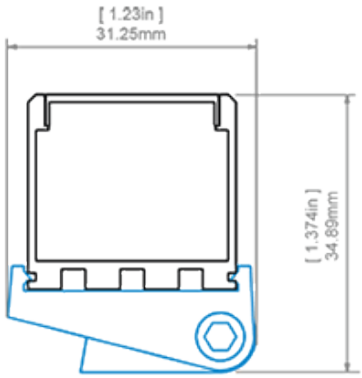
TECHNICAL DRAWING

LIPOD extrusion and AM-24 mounting bracket

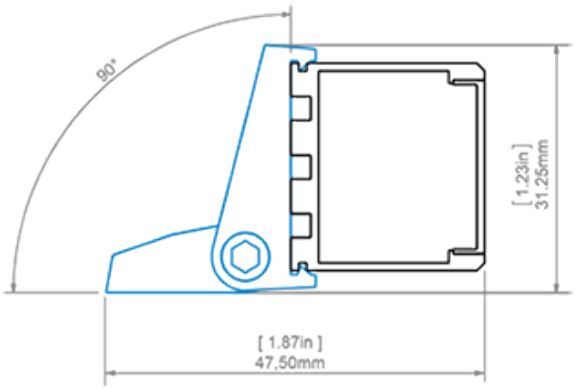
S1,S4



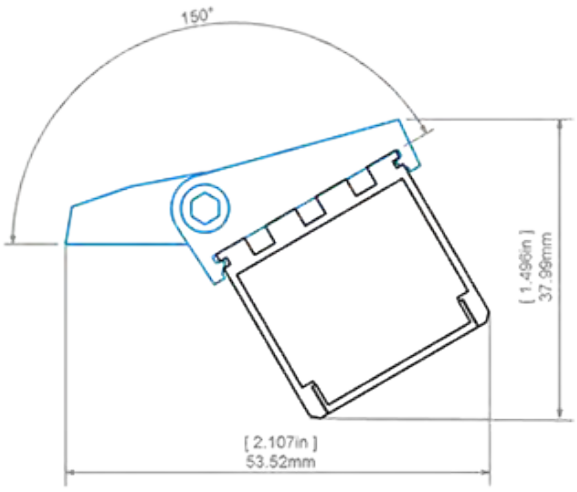
LIPOD extrusion GIP mounting bracket



LIPOD extrusion and REGIP-UV mounting bracket

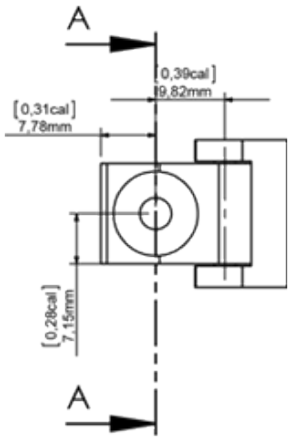


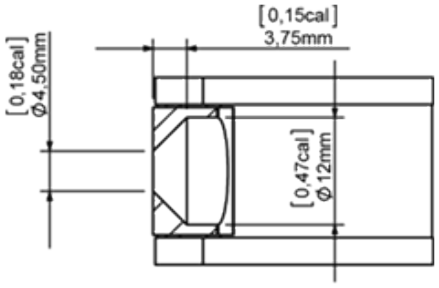
LIPOD extrusion and REGIP-UV mounting bracket



LIPOD extrusion and REGIP-UV mounting bracket

S1,S4

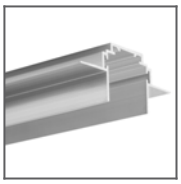




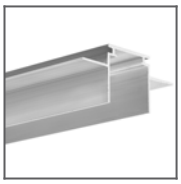
SECTION A-A

S1,S4

RELATED EXTRUSIONS



TEKNIK-ZM
Mounting track
Ref: C0399NA

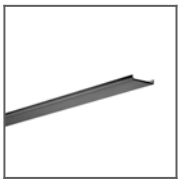


TEKUS Mounting
track
Ref: B6638V1NA

RELATED PRODUCTS

COVERS

BLACK



LIGER-22 Cover
black
Ref: 17044

CLEAR COVERS

HS-22 Cover
clear
Ref: 17022

FROSTED COVERS


LIGER-22 Cover frosted
Ref: 17032


G-K Cover frosted
Ref: 17007


G-L Cover frosted
Ref: 00413


HS-22 Cover frosted
Ref: 17011


LIGER-22 Cover frosted
Ref: 17032V1_10

S1,S4

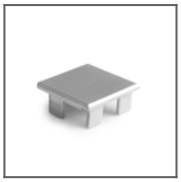
SEMI-TRANSPARENT COVERS

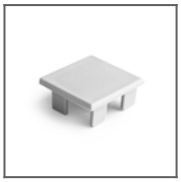

G-K Cover semi-transparent
Ref: 00415


G-L Cover semi-transparent
Ref: 17008

END CAPS

REGULAR END CAPS


LIPOD-MET metalized End cap
Ref: 24051


LIPOD grey End cap
Ref: 24004


LIPOD black End cap
Ref: 24263


LIPOD End cap
Ref: 24283

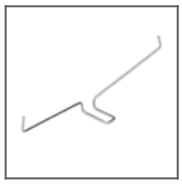
ACCESSORIES

FASTENERS & MOUNTING ACCESSORIES


GIP Mounting bracket
Ref: 24143


REGIP-UV Adjustable Mounting bracket
Ref: 24271


AM-24 Mounting bracket
Ref: 24235


GP Spring
Ref: 00293


BZP-ZZ Head conductive
Ref: 42215


BZP Head
Ref: 42213


TEKNIK Clip
Ref: 24003

S1,S4

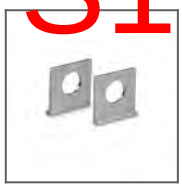

DP-ZZ Fastener
Ref: 00651


PUSZ-LIN-ZM
Fastener
Ref: 42256


PUSZ-PRET-ZM
Fastener
Ref: 42250


FI-8-LIN-ZM
Fastener black
Ref: 42285L9005


FI-8-LIN-ZMZ
Fastener black
Ref: 42286L9005

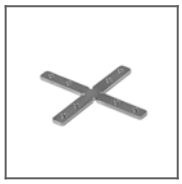

UCHO-ZM
Hanger
Ref: 42512

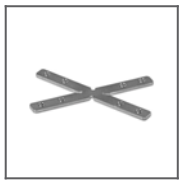
COMPONENTS FOR CONNECTING FIXTURES


X135 Coupler
Ref: _


ZM-45-G
Connector
Ref: 42338


ZM-Y120-G
Connector
Ref: 42336


ZM-X90-G
Connector
Ref: 42334


ZM-X60-G
Connector
Ref: 42332


ZM-X45-G
Connector
Ref: 42330


ZM-T90-G
Connector
Ref: 42328


ZM-T60-G
Connector
Ref: 42326


ZM-T45-G
Connector
Ref: 42324


ZM-PION-120
Connector
Ref: 42320


ZM-PION-45
Connector
Ref: 42314


ZM-135-G
Connector
Ref: 42310


ZM-90-G
Connector
Ref: 42306


ZM-60-G
Connector
Ref: 42304


L90 Coupler
Ref: _


ZM-180
Connector
Ref: 42717


L90PZ Coupler
Ref: _


ZM-135
Connector
Ref: 42720


L90PW Coupler
Ref: _


L135 Coupler
Ref: _


L135PW Coupler
Ref: _


ZM-120
Connector
Ref: 42728


T135L Coupler
Ref: _


ZM-90 Connector
Ref: 42716


T135R Coupler
Ref: _


ZM-PION-90
Connector
Ref: 42718


T90 Coupler
Ref: _


X90 Coupler
Ref: _


ZM-PION-135
Connector
Ref: 42719


ZM-120-G
Connector
Ref: 42308

MOUNTING SETS

S1,S4

RG-1 Mounting set Silver
Ref: 42647NI

ISOLATING BASES

Isolating bases 0,2" / 6mm
Ref: 42203

Isolating bases 0,2" / 5mm
Ref: 42204

Isolating bases 0,1" / 3mm
Ref: 42205

ADDITIONAL ITEMS

MP-22 Masking cover metallized
Ref: 17167

MP-22 Masking cover black
Ref: 17167L9005

MP-22 Masking cover white
Ref: 17167L9010

LED TAPES

HIGH EFFICACY

K-HE-1920-HD-24V
Ref: K-HE-1920-HD-24V

K-HE-0960-HD-24V
Ref: K-HE-0960-HD-24V

K-HE-1440-HD-24V
Ref: K-HE-1440-HD-24V

K-HE-0480-HD-24V
Ref: K-HE-0480-HD-24V

CRI95+

K-CR-1210-24V
Ref: K-CR-1210-24V

K-CR-1220-24V
Ref: K-CR-1220-24V

K-CR-1275-24V
Ref: K-CR-1275-24V

K-CR-1820-HD-24V
Ref: K-CR-1820-HD-24V

K-CR-1910-HD-24V
Ref: K-CR-1910-HD-24V

WP-K-CR-1210-24V
Ref: WP-K-CR-1210-24V

WP-K-CR-1220-24V
Ref: WP-K-CR-1220-24V

S1,S4


WP-K-CR-1275-24V
Ref: WP-K-CR-1275-24V


WP-K-CR-1910-HD-24V
Ref: WP-K-CR-1910-HD-24V


WP-K-CR-1820-HD-24V
Ref: WP-K-CR-1820-HD-24V

WHITE


K-1220-24V
Ref: K-1220-24


K-1275-12V
Ref: K-1275-12


K-1210-12V
Ref: K-1210-12


K-1210-24V
Ref: K-1210-24


K-1220-12V
Ref: K-1220-12


K-1820-HD-24V
Ref: K-1820-HD-24


K-1910-HD-24V
Ref: K-1910-HD-24


K-1275-24V
Ref: K-1275-24


WP-K-1210-12V
Ref: WP-K-1210-12


WP-K-1220-12V
Ref: WP-K-1220-12


WP-K-1220-IP65-12V
Ref: WP-K-1220-IP65-12V


WP-K-1220-24V
Ref: WP-K-1220-24


WP-K-1220-IP65-24V
Ref: WP-K-1220-IP65-24V


WP-K-1275-12V
Ref: WP-K-1275-12


WP-K-1275-24V
Ref: WP-K-1275-24


WP-K-1820-HD-24
Ref: WP-K-1820-HD-24


WP-K-1210-24V
Ref: WP-K-1210-24


WP-K-1640-HD-IP65-24
Ref: WP-K-1640-HD-IP65-24


WP-K-1910-HD-IP65-24
Ref: WP-K-1910-HD-IP65-24

RGB/ RGBW


WP-K-1275-RGB-12V
Ref: WP-K-1275-RGB-12V


K-1920-RGB+W-24V
Ref: K-1920-RGB+W-24V


K-1275-RGB-24V
Ref: K-1275-RGB-24V


K-1275-RGB-12V
Ref: K-1275-RGB-12V


WP-K-1920-RGB+W-24V
Ref: WP-K-1920-RGB+W-24V


WP-K-1275-RGB-24V
Ref: WP-K-1275-RGB-24V


K-1530-RGB+W-24V
Ref: K-1530-RGB+W-24V


WP-K-1530-RGB+W-24V
Ref: WP-K-1530-RGB+W-24V


K-1920-120-RGB-24V
Ref: K-1920-120-RGB-24V


WP-K-1920-120-RGB-24V
Ref: WP-K-1920-120-RGB-24V

ADJUSTABLE WHITE/ DIM TO WARM


K-22/50-1728-24V
Ref: K-22/50-1728-24V


WP-K-22/50-1728-24V
Ref: WP-K-22/50-1728-24V


WP-K-27/65-1920-24V
Ref: WP-K-2765-1920-24V


K-27/65-1920-24V
Ref: K-2765-1920-24V


K-30/18-1770-24V
Ref: K-30/18-1770-24V


WP-K-30/18-1770-24V
Ref: WP-K-30/18-1770-24V


K-30/18-1770-010V-24V
Ref: K-30/18-1770-010V-24V

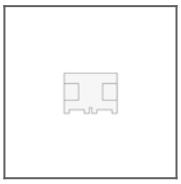

WP-K-30/18-1770-010V-24V
Ref: WP-K-30/18-1770-010V-24V

S1,S4

LONG RUN


K-LR-1000-24V
Ref: K-LR-1000-24

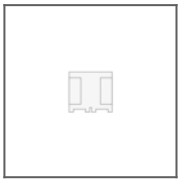
ADJUSTABLE WHITE CONNECTORS

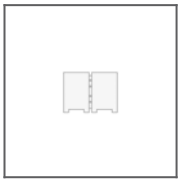

C7-AW-0W
Ref: C7-AW-0W


C8-AW-1.5W
Ref: C8-AW-1.5W


C9-AW-6W
Ref: C9-AW-6W

RGB, RGBW CONNECTORS


C4-RGB+W-0W
Ref: C4-RGB+W-0W


C6-RGB-0W
Ref: C6-RGB-0W


C11-RGB-1.5W
Ref: C11-RGB-1.5W


C5-RGB+W-1.5W
Ref: C5-RGB+W-1.5W


C14-RGB+W-6W
Ref: C14-RGB+W-6W

WHITE LED STRIP CONNECTORS


C-SC-IP20
Ref: C-SC-IP20


C-SS-IP20
Ref: C-SS-IP20


C-SC-IP65
Ref: C-SC-IP65


C-SS-IP65
Ref: C-SS-IP65


C1-0W
Ref: C1-0W

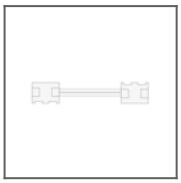

C2-1.5W
Ref: C2-1.5W


C3-6W
Ref: C3-6W

HD CONNECTORS

HD-C5-0W
Ref: HD-C5-0W

HD-C4-6W
Ref: HD-C4-6W



HD-C6-1.5W
Ref: HD-C6-1.5W

S1,S4

S3

R33100 RoHS

Features

- AC input range selectable by switch
- Withstand 300VAC surge input for 5 second
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC fan
- Built-in cooling Fan ON-OFF control
- 1U low profile
- Withstand 5G vibration test
- LED indicator for power on
- No load power consumption<0.75W
- 100% full load burn-in test
- High operating temperature up to 70℃
- Operating altitude up to 5000 meters (Note.8)
- High efficiency, long life and high reliability
- 3 years warranty

Applications

- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus

Description

LRS-350 series is a 350W single-output enclosed type power supply with 30mm of low profile design. Adopting the input of 115VAC or 230VAC (select by switch), the entire series provides an output voltage line of 3.3V, 4.2V, 5V, 12V, 15V, 24V, 36V and 48V.

In addition to the high efficiency up to 89%, with the built-in long life fan LRS-350 can work under -25~+70℃ with full load. Delivering an extremely low no load power consumption (less than 0.75W), it allows the end system to easily meet the worldwide energy requirement. LRS-350 has the complete protection functions and 5G anti-vibration capability; it is complied with the international safety regulations such as UL60950-1. LRS-350 series serves as a high price-to-performance power supply solution for various industrial applications.

Model Encoding

LRS - 350 - 3.3

- 3.3 — Output voltage
- 350 — Output power
- LRS — Series name

MEAN WELL

350W Single Output Switching Power Supply

LRS-350 series

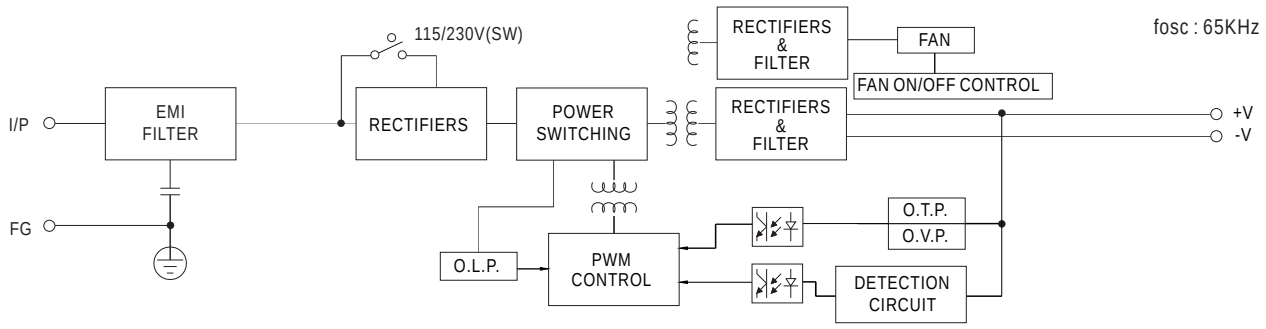
SPECIFICATION

MODEL		LRS-350-3.3	LRS-350-4.2	LRS-350-5	LRS-350-12	LRS-350-15	LRS-350-24	LRS-350-36	LRS-350-48
OUTPUT	DC VOLTAGE	3.3V	4.2V	5V	12V	15V	24V	36V	48V
	RATED CURRENT	60A	60A	60A	29A	23.2A	14.6A	9.7A	7.3A
	CURRENT RANGE	0 ~ 60A	0 ~ 60A	0 ~ 60A	0 ~ 29A	0 ~ 23.2A	0 ~ 14.6A	0 ~ 9.7A	0 ~ 7.3A
	RATED POWER	198W	252W	300W	348W	348W	350.4W	349.2W	350.4W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE	2.97 ~ 3.6V	3.6 ~ 4.4V	4.5 ~ 5.5V	10.2 ~ 13.8V	13.5 ~ 18V	21.6 ~ 28.8V	32.4 ~ 39.6V	43.2 ~ 52.8V
	VOLTAGE TOLERANCE Note.3	±4.0%	±4.0%	±3.0%	±1.5%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION Note.4	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION Note.5	±2.5%	±2.5%	±2.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	1300ms, 50ms/230VAC 1300ms,50ms/115VAC at full load							
	HOLD UP TIME (Typ.)	16ms/230VAC 12ms/115VAC at full load							
INPUT	VOLTAGE RANGE	90 ~ 132VAC / 180 ~ 264VAC by switch 240 ~ 370VDC (switch on 230VAC)							
	FREQUENCY RANGE	47 ~ 63Hz							
	EFFICIENCY (Typ.)	79.5%	81.5%	83.5%	85%	86%	88%	88.5%	89%
	AC CURRENT (Typ.)	6.8A/115VAC 3.4A/230VAC							
	INRUSH CURRENT (Typ.)	60A/115VAC 60A/230VAC							
	LEAKAGE CURRENT	<2mA / 240VAC							
PROTECTION	OVER LOAD	110 ~ 140% rated output power							
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	3.8 ~ 4.45V	4.6 ~ 5.4V	5.75 ~ 6.75V	13.8 ~ 16.2V	18 ~ 21V	28.8 ~ 33.6V	41.4 ~ 46.8V	55.2 ~ 64.8V
		Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	OVER TEMPERATURE	Hiccup mode, recovers automatically after fault condition is removed							
FUNCTION	FAN ON/OFF CONTROL (Typ.)	RTH3≧50℃ FAN ON, ≦40℃ FAN OFF							
ENVIRONMENT	WORKING TEMP.	-25 ~ +70℃ (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 90% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)							
	VIBRATION	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes							
SAFETY	SAFETY STANDARDS	UL60950-1, BSMI CNS14336-1, EAC TP TC 004 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC							
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC / 25℃/ 70% RH							
	EMC EMISSION	Compliance to BSMI CNS13438, EAC TP TC 020							
	EMC IMMUNITY	Compliance to EAC TP TC 020							
OTHERS	MTBF	327.9K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	215*115*30mm (L*W*H)							
	PACKING	0.76Kg; 15pcs/12.4Kg/0.78CUFT							

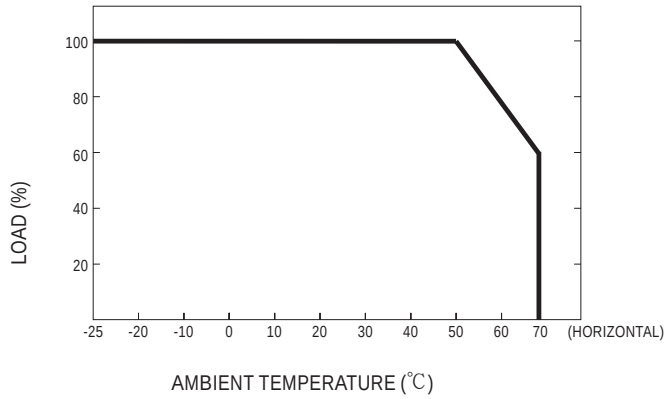
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Line regulation is measured from low line to high line at rated load.
5. Load regulation is measured from 0% to 100% rated load.
6. Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.
7. The 150% peak load capability is built in for up to 1 second for 12~48V.LRS-350 will enter hiccup mode if the peak load is delivered for over 1 second and will recover once it resumes to the rated current level(115VAC/230VAC).
8. The ambient temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m(6500ft).

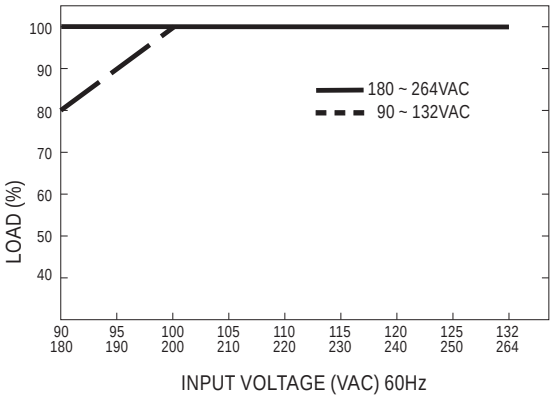
Block Diagram



Derating Curve

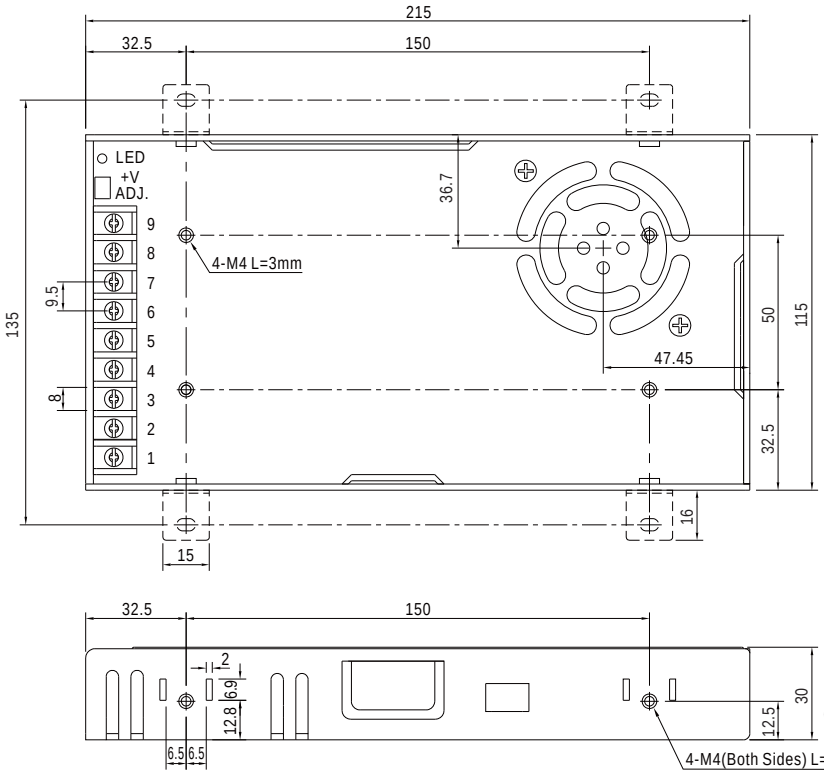


Static Characteristics



■ Mechanical Specification

Case No.207A Unit:mm



Terminal Pin No. Assignment :

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4~6	DC OUTPUT -V
2	AC/N	7~9	DC OUTPUT +V
3	FG ⏚		

■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html

MAGNITUDE
Lighting Converters

Specification Sheet

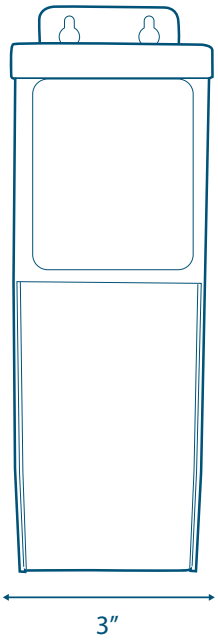
Dimmable | 24V DC | ETL | CSA

150W LED Driver

S4

Indoor & Outdoor Magnetic Dimmable LED Driver

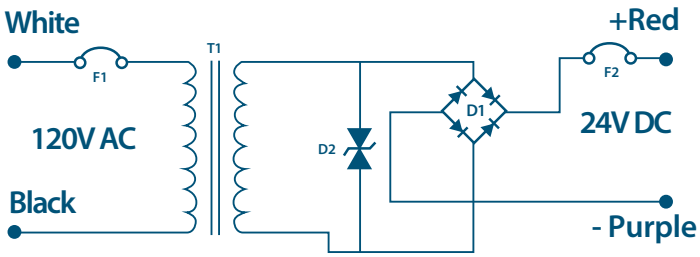
Product Code: M150L24DC-AR

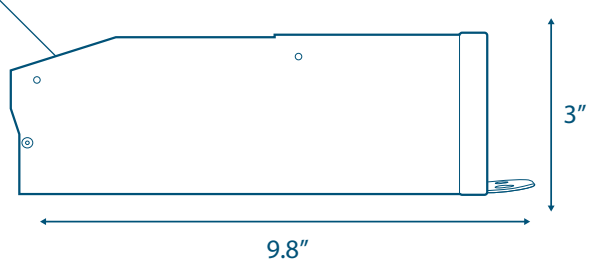


Magnitude's M150L24DC-AR is the most compact LED driver on the market with a magnetic transformer core. It is equipped with two auto-reset breakers, one on the input and one on the output, which protect both the load and driver. The driver is encased in a coated metal box that includes 2 knock-outs on the bottom to enable easy installation that complies with electrical code requirements.

Features

Dimmable with most quality Magnetic Low-Voltage dimmers
Dual protection - primary and secondary auto-reset circuit breakers
Nema 3R Enclosure - Outdoor Use
Two knock-outs one on each side
ETL Listed
CSA Listed

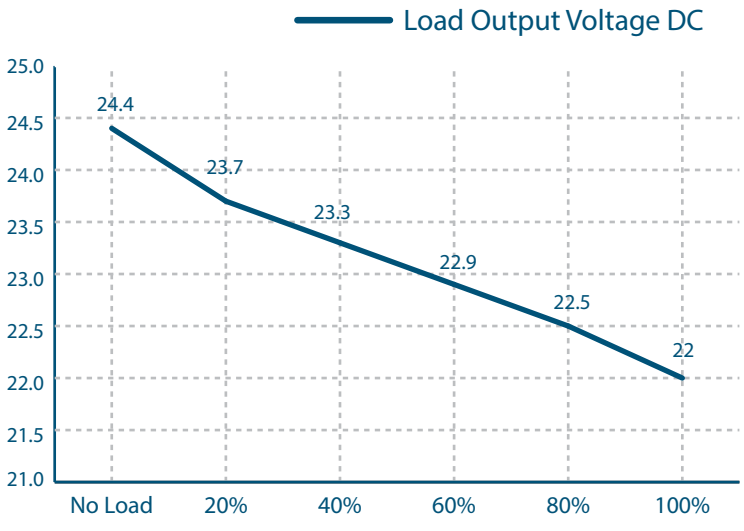




Driver's Specifications

Max Load	150W
Input Voltage	120V AC
Input Current Full Load	1.95 A
Output Voltage Full Load	22V DC
Max Output Current Full Load	13.3 A
Open Circuit Output Voltage	24.4V DC
Avg. Efficiency	85%
Power Factor on I	0.93
Coil Former	Double Section Bobbin
Thermal Class	B130°c
Leads Primary	PVC 600V #18
Leads Secondary	PVC 300V #12
Circuit Breaker	primary and secondary auto reset
Dimensions L*W*H	9.8 in. x 3 in. x 3 in.
Weight	87 Oz.

The specifications are subject to change without notice



PLEASE NOTE: HIGHLIGHTED MUST BE FILLED OUT TO COMPLETE THIS CONTRACT. THIS INCLUDES CONTENT IN PAGE 1, SECTIONS 4.01, 4.20, 5.06, THE SIGNATURE PAGE & SCHEDULE A.

This Agreement (referred to alternately as "Agreement" or "Contract") made as of the _____ day of _____, 20____, for Contract Number D990120 by and between STATE UNIVERSITY OF NEW YORK, a corporation organized and existing under the laws of the State of New York, with its principal office located at State University Plaza, 353 Broadway, Albany, New York 12246, on behalf of State University of New York at Purchase College located at 735 Anderson Hill Road, Purchase, NY 10577, hereinafter referred to as "University" and _____having its principal office located at _____ _____, and a Federal ID or Social Security No. of {insert number}, hereinafter referred to as "the "Contractor."

WITNESSETH:

The parties hereto agree that the Contractor shall:

(a) furnish and perform all work of every kind required and all other things necessary to complete in the most substantial and workmanlike manner the construction of

SU-071321
Studio A Renovation
Purchase College

in strict accordance with the Contract Documents; and

(b) complete all work necessary for substantial completion by **within 180 days after the date of the Notice to Proceed**, or within the time to which such completion may have been extended in accordance with the Contract Documents;

(c) in the event it fails to substantially complete all the work on time, pay to the University liquidated damages in accordance with the liquidated damages schedule listed on page one of the contractors proposal for each calendar day of delay of substantially completing all the work; and

(d) do everything required by the Contract; subject, however, to the terms, provisions and conditions listed hereinafter.

Article I
General Provisions

Section 1.01 Definitions

Where the following words and expressions are used in the Contract Documents it is understood that they have the meaning set forth as follows:

Allowance	Any and all work and materials which may be required of the Contractor in performing work set forth under one or more allowances to this Agreement shall be Work, as defined herein, which shall be performed in accordance with the base schedule for the performance of the Contractor's Work. Contractor shall not be entitled to an extension of time for the performance of an allowance or all allowances.
Consultant	The Architect or Engineer named in the Notice to Bidders or such other person or firm designated by the University to provide general administration of the Contract and inspection of the work.
Bidding Documents	Notice to Bidders, Information for Bidders and Proposals
Bonds	Performance Bond and Labor and Material Bond

Delay	For purposes of this document and as used herein and in any other contract documents between the Contractor and the University the word “delay” shall be interpreted broadly and shall include by way of example only and not by way of limitation: delay, disruption, interference, inefficiencies, impedance, hindrance, acceleration, resequencing, schedule impacts, lack of timeliness by the University and/or Consultant, and lack of coordination, cumulative impact of multiple change orders, delay and other impacts.
Contract or Contract Documents	The Agreement, Exhibits A and A-1, Bidding Documents, Bonds, Specifications, Project Manual, Drawings Addenda issued prior to the opening of bids and Change Orders issued after award of the Contract.
University	State University Construction University
Notice to Proceed	Written notice provided by the University to the Contractor stating the date on which the contractor can begin project work.
Project	The facility or facilities to be constructed including all usual, appropriate and necessary attendant work shown on, described in or mentioned in the Contract.
Site	The area within the Contract limit lines, as shown on the Drawings, and all other areas upon which the Contractor is to perform work.
Substantial Completion	Substantial Completion is the completion of Work so that the Project can be fully occupied and used for the purposes for which it is intended. Substantial Completion includes: (1) completion of all work required for the issuance of a code compliance certificate, or a temporary approval for occupancy, completed in a manner that includes no uncorrected deficiency or material violation of the Building Code of New York State within the area or work for which the certificate is to be issued; (2) completion of all building systems and functional testing of said systems (other than tests that cannot be performed due to the seasonal environmental conditions in effect at the time of completion); (3) acceptance and approval of the Operating Instructions and Manuals and Training of Campus Personnel; and (4)the sum of values determined for Punch List work at the time of Substantial Completion shall not exceed one (1) percent of the amount of the Contract consideration unless otherwise agreed to by the University.
Work	The using, performing, installing, furnishing and supplying of all materials, equipment, labor, services and incidentals necessary or proper for or incidental to the successful completion of the Project and the carrying out of all duties and obligations imposed upon the Contractor by the Contract.

Section 1.02 Captions
The titles or captions of Articles and Sections of the Contract are intended for convenience and reference purposes only and in no way define, limit or describe the scope or intent thereof or of the Contract or in any way affect the Contract.

Section 1.03 Nomenclature
Materials, equipment or other work described in words and abbreviations which have a well-known, technical or trade meaning shall be interpreted as having such meaning in connection with the Contract.

Section 1.04 Entire Agreement
The Contract constitutes the entire agreement between the parties hereto and no statement, promise, condition, understanding, inducement or representation, oral or written, expressed or implied, which is not contained herein shall be binding or valid and the Contract shall not be changed, modified, or altered in any manner except by an instrument in writing executed by the parties hereto.

Section 1.05 Successors, Assigns and Agents
To the extent allowed by the terms of "Exhibit A”, the Contract shall bind the successors, assigns and representatives of the parties hereto. The University reserves the right to have the State University Construction University Fund act as its agent at any time or duration of this Agreement. Such designation of the Fund to act on the behalf of the University shall be in writing and addressed to the Contractor.

Section 1.06 Accuracy and Completeness of Contract Documents

(1) The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intention of the Documents is to include all materials, plant, equipment, tools, skill and labor of every kind necessary for the proper execution of the work and also those things which may be reasonably inferable from the Contract Documents as being necessary to produce the intended results.

(2) The Contract Documents contemplate a finished piece of work of such character and quality as is reasonably inferable from them. The Contractor acknowledges that the Contract consideration includes sufficient money allowance to make its work complete and operational and in compliance with good practice and it agrees that inadvertent minor discrepancies or omissions or the failure to show details or to repeat on any part of the Contract Documents the figures or notes given on another shall not be the cause for additional charges or claims. In case of a conflict between any part or parts of the Contract Documents with any other part or parts thereof, as contrasted to an omission or failure to show details or to repeat on any part of the Contract Documents the figures or notes given on another part thereof, the following shall be given preference, in the order hereinafter set forth, to determine what work the Contractor is required to perform: (a) Exhibit A and A-1, (b) Addenda (later dates to take preference over earlier dates); (c) Amendments to Agreement; (d) Agreement; (e) Bidding Documents; (f) Specifications; (g) Schedules (i.e. finish schedules); (h) Large scale detail Drawings (detail drawings having a scale of 3/4" and over); (i) Large scale plan and section Drawings (plan and section drawings having a scale equal to or larger than that used for the basic floor or site plan, as the case may be); (j) Small scale detail Drawings (detail drawings having a scale of less than 3/4"); and (k) Small scale plan and section Drawings (plan and section drawings having a scale less than that used for the basic floor or site plan, as the case may be). In the event of such a conflict between or among parts of the Contract Documents that are entitled to equal preference, the more expensive way of doing the work, the better quality or greater quantity of material shall govern unless the University otherwise directs.

Section 1.07 Organization of Contract Documents

The Specifications and Drawings are generally divided into trade sections for the purpose of ready references, but such division is arbitrary and such sections shall not be construed as the prescription by the Consultant or the University of the limits of the work of any subcontractor or as a determination of the class of labor or trade necessary for the fabrication, erection, installation or finishing of the work required. The Contractor will be permitted to allot the work of subcontractors at its own discretion regardless of the grouping of the Specifications and Drawings. It shall be the Contractor's responsibility to settle definitively with each subcontractor the portions of the work which the latter will be required to do. The University and the Consultant assume no responsibility whatever for any jurisdiction claimed by any of the trades involved in the work.

Section 1.08 Furnishing of Contract Documents

The University shall establish the format for the Contract Documents (hard copy and/or electronic media) at the start of the Project. The Contractor shall be furnished, free of charge, with two (2) copies of the Specifications and Drawings in the selected format(s). Any other copies of the Specifications and Drawings which the Contractor may desire can be obtained at the Contractors expense.

Section 1.09 Examination of Contract Documents and Site

By executing the Contract, the Contractor agrees that it has carefully examined the Contract Documents together with the site of the proposed work as well as its surrounding territory; that it is fully informed regarding all the conditions affecting the work to be done and the labor and materials to be furnished for the completion of the Contract; and that its information has been acquired by personal investigation and research and not in the estimates and records of the University.

Section 1.10 Invalid Provisions

If any term or provision of the Contract Documents or the application thereof to any person, firm or corporation or circumstance shall, to any extent, be invalid or unenforceable, the remainder of the Contract Documents, or the application of such terms or provisions to persons, firms or corporations or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby and each term or provision of the Contract Documents shall be valid and be enforced to the fullest extent permitted by law.

Section 1.11 No Collusion or Fraud
The Contractor hereby agrees that the Contract was secured without collusion or fraud and that neither any officer nor any employee of the University has or shall have a financial interest in the performance of the Contract or in the supplies, work or business to which it relates, or in any portion of the profits thereof.

Section 1.12 Notices
(1) All notices permitted or required hereunder shall be in writing and shall be transmitted either:

a. via certified or registered United States mail, return receipt requested;
b. by personal delivery;
c. by expedited delivery service; or
d. by email if actually received by the University. Contractor bears the burden of proof of service by email and receipt of email by the University.

Such notices shall be addressed as follows or to such different addresses as the parties may from time to time designate:

Purchase College, SUNY
Name: Sheli Taylor
Title: Associate Director, Contracts & Procurement Services
Address: 735 Anderson Hill Road, Purchase, NY 10577
Telephone Number: 914-251-6089
E-mail address: sheli.taylor@purchase.edu

{insert company name}
Name: {insert designated contact's title}
Title: {insert designated contact's title}
Address: {insert company}
Telephone Number: {insert phone}
E-mail Address: {insert email}

(2) Any such notice shall be deemed to have been given either at the time of personal delivery or actual receipt by the University, or in the case of email, upon receipt by the University.

(3) The parties may, from time to time, specify any new or different address in the United States as their address for purpose of receiving notice under this Agreement by giving fifteen (15) days written notice to the other party sent in accordance herewith. The parties agree to mutually designate individuals as their respective representatives for the purposes of receiving notices under this Agreement. Additional individuals may be designated in writing by the parties for purposes of implementation and administration/billing, resolving issues and problems and/or for dispute resolution.

Section 1.13 Singular-Plural; Male-Female
As used in the Contract Documents, the singular of any word or designation, whenever necessary or appropriate, shall include the plural and vice versa, and the masculine gender shall include the female and neutral genders and vice versa.

Article II
Contract Administration and Conduct

Section 2.01 Consultant's Status
(1) The Consultant, as the University's representative, shall provide general administration of the Contract and inspection of the work. The Consultant will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the work, and it will not be responsible for the Contractor's failure to carry out the work in accordance with the Contract Documents. The Consultant's duties, services and work shall in no way supersede or dilute the Contractor's obligation to perform the work in conformance with all Contract requirements, but it is empowered by the University to act on its behalf with respect to the proper execution of the work and to give instructions and/or direction when necessary to

require such corrective measures as may be necessary, in its professional opinion, to insure the proper execution of the Contract or to otherwise protect the University's interest.

(2) The Consultant shall have the authority to stop the work or to require and/or direct the prompt execution thereof whenever such action may be necessary, in its professional opinion, to insure the proper execution of the Contract or to otherwise protect the interests of the University.

(3) Except as otherwise provided in the Contract, the Consultant shall determine the amount, quality, acceptability, fitness and progress of the work covered by the Contract and shall decide all questions of fact which may arise in relation to the interpretation of the plans and Specifications, the performance of the work and the fulfillment by the Contractor of the provisions of the Contract. The Consultant shall in the first instance be the interpreter of the provisions of the Contract and the judge of its performance and it shall use its power under the Contract to enforce its faithful performance.

Section 2.02 Finality of Decisions

(1) Any decision or determination of the Consultant under the provisions of the Contract shall be final, conclusive and binding on the Contractor unless the Contractor shall, within ten (10) working days after such decision, make and deliver to the University a verified written statement of its contention that the decision of the Consultant is contrary to a provision of the Contract. The University shall thereupon determine the validity of the Contractor's contention. Pending decision by the University, the Contractor shall proceed in accordance with the Consultant's decision.

(2) Wherever it is provided in the Contract Documents that an application must be made to the University and/or determination made by the University, the University's decision on such application and/or its determination under the Contract Documents shall be final, conclusive and binding upon the Contractor unless the Contractor, within ten (10) working days after receiving notice of the University's decision or determination, files a written statement with the University and the Consultant that it reserves its rights in connection with the matters covered by said decision or determination and after a court of competent jurisdiction determines the University's said decision or determination to be fraudulent, capricious, arbitrary or so grossly erroneous as necessarily to imply bad faith in an action brought in accordance with Section 4.24.

Section 2.03 Claims and Disputes

(1) If the Contractor claims (i) that any work it has been ordered to do is extra work or (ii) that it has performed or is going to perform extra work or (iii) that any action or omission of the University or the Consultant is contrary to the terms and provisions of the Contract, it shall:

a. Promptly comply with such order;

b. Notwithstanding the provisions of Section 1.12 of the Agreement and any other provisions of the Contract documents to the contrary, file with the University and the Consultant, within five (5) working days after being ordered to perform the work claimed by it to be extra work or within five (5) working days after commencing performance of the extra work, whichever date shall be the earlier, or within fifteen (15) working days after the said action or omission on the part of the University or the Consultant occurred, a written notice of the basis of its claim and request a determination thereof.

c. Notwithstanding the provisions of Section 1.12 of the Agreement and any other provisions of the Contract documents to the contrary, file with the University and the Consultant, within thirty (30) calendar days after said alleged extra work was required to be performed or said alleged extra work was commenced, whichever date shall be the earlier, or said alleged action or omission by the University or the Consultant occurred, a verified detailed statement, with documentary evidence, of the items and basis of its claim, including an initial and updated detailed Time Progress Schedule,

d. Produce for the University's examination, upon notice from the University, such information and documentation as directed by the University, which shall include but not be limited to job cost reports and all estimates and documentation used to develop the Bid Proposal, all its books of account, bills, invoices, payrolls, subcontracts, time books, progress records, daily reports, bank deposit books, bank statements, checkbooks and cancelled checks, showing all of its actions and transactions in connection with or relating to or arising by reason of its

claim, and submit persons in its employment and in its subcontractors' employment for examination under oath by any person designated by the University to investigate any claims made against the University under the Contract, such examination to be made at the offices of the Contractor; and

e. Proceed diligently, pending and subsequent to the determination of the University with respect to any such disputed matter, with the performance of the Contract and in accordance with all instructions of the University and the Consultant.

(2) The Contractor's failure to comply with any or all parts of subdivision b, c and d of paragraph (1) of this Section shall be deemed to be: (i) a conclusive and binding determination on its part that said order, work, action or omission does not involve extra work and is not contrary to the terms and provisions of the Contract; and (ii) a waiver by the Contractor of all claims for additional compensation or damages as a result of said order, work, action or omission. The provisions of subdivision b, c and d of paragraph (1) of this Section are for the purpose of enabling the University to avoid waste of public funds by affording it promptly the opportunity to cancel or revise any order, change its plans, mitigate or remedy the effects or circumstances giving rise to a claim or take such other action as may seem desirable and to verify any claimed expenses or circumstances as they occur. Compliance with such provisions is essential whether or not the University is aware of the circumstances of any order or other circumstances which might constitute a basis for a claim and whether or not the University has indicated it will consider a claim in connection therewith.

(3) The Contractor's failure to submit and maintain a Time Progress Schedule in accordance with Section 3.02 of the Agreement shall be deemed to be a waiver by the Contractor of all claims for additional time, compensation or damages as a result of any condition which is an alleged cause of delay in the completion of the work. The Schedule of Record, regularly updated and submitted at required durations in accordance with the provisions of the General Requirements, Section paragraph titled "Project Schedule": (i) informs the University and affords it promptly of regular opportunities to change its plans or mitigate or remedy the effects or circumstances giving rise to a claim of delay in the completion of the work or take such other action as may seem desirable to verify any claimed circumstances as they occur; and (ii) forms a record which becomes the basis of the University's verification of an alleged cause of delay in the completion of the work.

(4) No person has power to waive or modify any of the foregoing provisions and, in any action against the University to recover any sum in excess of the sum certified by the University to be due under or by reason of the Contract, the Contractor must allege in its complaint and prove at the trial compliance with the provisions of this Section.

(5) Nothing in this Section shall in any way affect the University's right to obtain an examination before trial or a discovery and inspection in any action that might be instituted by or against the University or the Contractor.

Section 2.04 Omitted Work

The University reserves the right at any time during the progress of the work to delete, modify or change the work covered by the Contract, by a Change Order or Field Order thereto providing for either a reduction or omission of any portion of the work, without constituting grounds for any claim by the Contractor for allowances for damages or for loss of anticipated profits and in such event a deduction shall be made from the Contract consideration, the amount of which is to be determined in accordance with the provisions of Section 4.02 or 4.05A of the Agreement.

Section 2.05 Extra Work

(1) The University reserves the right at any time during the progress of the work to add, modify or change the work covered by the Contract by Change Order or Field Order or as otherwise required by the University thereto providing for extra work of either a qualitative or quantitative nature and in such event the Contract consideration may be increased by an amount to be determined in accordance with the provisions of Sections 4.02 and 4.05A of the Agreement and the completion date for all or any part of the work may be extended for such period of time as may be determined by the University as necessary, because of the extra work, to complete the work or any part thereof.

(2) Nothing in the Contract Documents shall excuse the Contractor from proceeding with the extra work as directed., The terms and conditions of the Contract Documents shall be fully applicable to all extra work.

(3) The Contractor shall have no claim for extra work or an extension of time if the performance of such work, in the judgment of the Consultant, is made necessary or desirable because of any act or omission of the Contractor which is not in accordance with the Contract.

(4) Notwithstanding the provisions of Section 2.02 of the Agreement and any other provisions of the Contract Documents to the contrary, the University, after conferring with the Consultant, shall have the right to overrule a determination or decision of the Consultant, that relates to whether certain work is included in the Contract Documents or is extra work, which the University believes is incorrect; in the event the University exercises such right, that determination or decision shall be final, conclusive and binding upon the Contractor and the University unless the same shall be determined by a court of competent jurisdiction to have been fraudulent, capricious, arbitrary or so grossly erroneous as necessarily to imply bad faith.

Section 2.06 Contractor to Give Personal Attention

(1) The Contractor shall give its constant personal attention to all the work while it is in progress and shall place the work in charge of a competent and reliable full-time superintendent acceptable to the Consultant and the University who shall have authority to act for the Contractor and who shall be accountable to the Consultant to the extent provided in the Contract. Unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in its employ, such superintendent shall not be changed without the written permission of the Consultant and the University.

(2) When the Contractor and its superintendent are temporarily absent from the site of the work, the Contractor or its superintendent shall designate a responsible supervisory employee, approved by the Consultant and the University, to receive such orders as the Consultant or its representative may give. At no time shall any work be conducted on the site in the absence of an individual present who has been so designated by the Contractor or its superintendent as having authority to receive and execute instructions given by the Consultant or its representative.

(3) If the superintendent, project manager or other supervisory employees are not satisfactory to the University, the Contractor shall, if directed by the University, immediately replace such supervisory employees with other supervisory employees acceptable to the Consultant and the University. Such replacement and all related impacts shall be at no additional cost to the University.

Section 2.07 Employment of Workers

The Contractor shall at all times employ competent and suitable workers and equipment which shall be sufficient to prosecute all the work to full completion in a disciplined orderly manner and in accordance with the Time Progress Schedule and the contractually required time of performance. All workers engaged in special or skilled work shall have had sufficient experience in such work to properly and satisfactorily perform the same. Should the Consultant deem any employee of the Contractor or any subcontractor incompetent, careless, insubordinate or otherwise objectionable or whose continued employment on the work is deemed by the Consultant to be contrary to the public interest, it shall so advise the Contractor and the latter shall dismiss or shall cause the subcontractor, if such employee is employed by the latter, to dismiss such employee and such employee shall not again be employed on the work to be performed under the Contract without obtaining the prior written approval of the Consultant.

Section 2.08 Detailed Drawings and Instructions

Upon timely notice from the Contractor that supplementary information is required, the Consultant shall furnish additional instructions, by means of Drawings or otherwise, necessary for the proper execution of the work. All such Drawings and instructions shall be consistent with the Contract Documents, true developments thereof and reasonably inferable therefrom. The work shall be executed in conformity therewith and the Contractor shall do no work without proper Drawings and/or instructions.

Section 2.09 Contract Documents to Be Kept at Site

The Contractor shall keep at the site of the work a copy of the Drawings and Specifications and shall at all times give the Consultant and the University access thereto.

Section 2.10 Permits and Building Codes

The Contractor shall obtain from the proper authorities all permits legally required to carry on its work, pay any and all taxes and fees legally required and shall be responsible for conducting its operations in accordance with the provisions

of such permits. Except as otherwise expressly provided in the Contract Documents, all of the work covered by this Agreement which is to be performed on property owned by the State University of New York is not subject to the building code of any city, county or other political subdivision of the State of New York. It is, however, subject to the provisions of the Building Code of New York State and the applicable Federal and State health and labor laws and regulations.

Section 2.11 Surveys

(1) From the data shown on the Drawings and identified at the site by the Consultant, a licensed surveyor, to be designated and paid for by the University, shall establish one (1) fixed benchmark and one (1) fixed base line at the site. The Contractor shall work from the benchmarks and base lines shown on the Drawings, identified at the site by the Consultant and established at the site by the aforesaid surveyor and shall establish such supplementary bench marks and base lines that are required in order for it to lay out the work. 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 Consultant to meet changed conditions or as a result of modifications to the work covered by the Contract.

(2) The Contractor shall furnish at its own expense such stakes and other required equipment, tools and materials, and all labor as may be required in laying out any part of the work. If, for any reason, monuments are disturbed, it shall be the responsibility of the Contractor to reestablish them, without cost to the University, as directed by the Consultant. The Consultant 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.

(3) In all multiple-story construction, the Contractor shall establish and maintain line marks at each floor level and grade marks four (4) feet above the finished floor at each floor level.

Section 2.12 Site Conditions

(1) The Contractor acknowledges that it has assumed the risk and that the Contract consideration includes such provision as it deems proper for all physical conditions and subsurface conditions as it could reasonably anticipate encountering from the provisions of the Contract Documents, borings, rock cores, topographical maps and such other information as the University or the Consultant made available to it prior to the University's receipt of bids or from its own inspection and examination of the site prior to the University's receipt of bids.

(2) In the event that the Contractor encounters subsurface physical conditions or other latent physical conditions at the site differing substantially from those shown on or described or indicated in the Contract Documents and which could not have been reasonably anticipated from the aforesaid information made available by the University or the Consultant or from the Contractor's aforesaid inspection and examination of the site, it shall give immediate notice to the Consultant of such conditions before they are disturbed. The Consultant will thereupon promptly investigate the conditions and, if it finds that they do substantially differ from that which should have been reasonably anticipated by the Contractor, it shall make such changes in the Drawings and Specifications as may be necessary and a Change Order or Field Order may be issued, the amount of which shall be determined in accordance with the provisions of Sections 4.02 and 4.05A, to reflect any increase or decrease in the cost of, or the time required for, performance of the Contract as a result of any of the aforesaid changes made by the Consultant and/or as a result of such unanticipated subsurface conditions.

Section 2.13 Right to Change Location

When additional information regarding the subsurface conditions becomes available to the University as a result of the excavation work, further testing or otherwise, it may be found desirable to change the location, alignment, dimensions or grades to conform to such conditions. The University reserves the right to make such reasonable changes in the work as, in its opinion, may be considered necessary or desirable; such changes and any adjustments in the Contract consideration as a result thereof are to be made in accordance with the provisions of Sections 2.04, 2.05 4.02 and 4.05A of the Agreement.

Section 2.14 Unforeseen Difficulties

Except as otherwise expressly provided in Section 2.12 of the Agreement and in other Sections of the Contract Documents, the Contractor acknowledges that it has assumed the risk and that the Contract consideration includes such

provisions as it deems proper for any unforeseeable obstacles or difficulties which it may encounter in the performance of the work.

Section 2.15 Moving Materials and Equipment

Should it become necessary, in the judgment of the Consultant, at any time during the course of the work to move materials which are stored on the site and equipment which has been temporarily placed thereon, the Contractor upon request of the Consultant shall move them or cause them to be moved at its sole cost and expense; provided, however, if materials and equipment that have been stored or placed by the Contractor at a location on the site expressly approved, in writing, by the Consultant and the same are moved or caused to be moved by the Contractor at the Consultant's request, such removal shall be deemed extra work and the Contractor shall be compensated therefor in accordance with the provisions of Sections 4.02 and 4.05A of the Agreement.

Section 2.16 Other Contracts

(1) Prior to and during the progress of the work hereunder the University reserves the right to let or permit the letting of other contracts relating to the Project or in connection with work on sites within the Contract limit lines or adjoining or adjacent to that on which the work covered by this Agreement is to be performed. In the event such other contracts are let, or have previously been let, the Contractor and such other contractors shall coordinate their work with each other, arrange the sequence of their work to conform with the progressive operation of all the work covered by such contracts and afford each other reasonable opportunities for the introduction and storage of their materials, supplies and equipment and the execution of their work. If the Contractor or such other contractors contend that their work or the progress thereof is being interfered with by the acts or omissions of the other or others or that there is a failure to coordinate or properly arrange the sequence of the work on the part of the Contractor or such other contractors, they shall, within five (5) working days of the commencement of such interference or failure of coordination or failure to perform work in proper sequence, give written notification to the University and the Consultant of such contention. Upon receipt of such notification or on its own initiative, the Consultant shall investigate the situation and issue such instructions to the Contractor or such other contractors with respect thereto as it may deem proper. The Consultant shall determine the rights of the Contractor and of such other contractors and the sequence of work necessary to expedite the completion of all work covered by this Agreement in relation to the work covered by said other contracts.

(2) The Contractor agrees that it has and will make no claim for damages against the University by reason of any act or omission to act by any other contractor or in connection with the Consultant's or University's acts or omissions to act in connection with such other contractor, but the Contractor shall have a right to recover such damages from the other contractors.

(3) If the proper and accurate performance of the work covered by the Contract depends upon the proper performance and execution of work not included herein or depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Consultant any defects in such work that render it unsuitable for proper execution and results. Its failure to so inspect and report shall constitute an acceptance of the other contractor's work as fit and proper for the reception of the work covered by the Contract, except as to latent defects which may be discovered thereafter.

Section 2.17 Inspection and Testing

(1) All materials and workmanship shall be subject to inspection, examination and testing by the Consultant and the University at all times during the performance of the work and at all places where the work is carried on. Except as otherwise herein specified, the University shall pay for the cost of inspection, examination and testing by the Consultant or the University. If, however, the tests prove that the materials and/or work tested do not meet the requirements of the Contract, then the entire cost of such tests and any additional testing and or inspections required until the work is deemed compliant is to be borne by the Contractor. The Consultant will have the right to reject defective material and workmanship furnished by the Contractor or require its correction. The Contractor, without charge therefor, shall satisfactorily and promptly correct all rejected work and replace all rejected material with proper material.

(2) The Contractor shall promptly segregate and remove from the site of the work all rejected material and work. If the Contractor shall fail to proceed at once with the replacing of rejected material and/or correction of defective workmanship, the University may, by contract or otherwise, replace such material and/or correct such

workmanship, and charge the costs thereof to the Contractor or it may cancel the Contract and terminate the Contractor's employment as provided in the Agreement.

(3) The Contractor, without additional charge, shall promptly furnish all reasonable facilities, labor materials and equipment with associated operators necessary for the safe and convenient access, inspection and testing that may be required by the Consultant or the University.

(4) If the Contract Documents or the Consultant's instructions or the applicable laws, ordinances or regulations of any governmental authority require any part of the work covered by the Contract to be specially tested or inspected, the Contractor shall give the Consultant timely notice of its readiness for such testing or inspection or, if the same is to be performed by a governmental authority, of the date fixed therefor. If any such work, without the written permission of the Consultant, should be covered up prior to such testing or inspection, the Contractor, at its sole cost and expense must, if directed by the Consultant, uncover the same for testing or inspection and reconstruct same after the tests or inspection are conducted. All certificates of inspection or testing, involving the Contractor's work, required to be obtained from governmental authorities are to be secured by the Contractor at its sole cost and expense.

(5) Should it be considered necessary or advisable by the Consultant at any time before final acceptance of the entire work to make an examination of work already completed by removing or tearing out same, the Contractor, upon request, shall furnish all necessary facilities, labor and material to perform such examination. If the work subject to such examination is found to be defective or nonconforming in any manner due to the fault of the Contractor or any of its subcontractors, such uncovering or destruction and necessary reconstruction, even though such includes work not covered in the Contract, shall be at the expense of the Contractor. If, however, such work after testing and examination is found to be satisfactory, the University will pay the Contractor the cost of such uncovering or destruction and reconstruction, such cost to be determined as in the case of extra work as provided in Sections 4.02 and 4.05A.

(6) Inspection of material and furnished articles to be incorporated in the work may be made at the place of production, manufacture or shipment unless otherwise stated herein. The inspection of material and workmanship for final acceptance as a whole or in part will be made at the site of the work.

Section 2.18 Subcontractors

(1) Except for subcontractors designated by the University, or required to be named at any earlier date, pursuant to the provisions of the Information for Bidders, within thirty (30) calendar days after receipt of the notice to proceed, the Contractor must submit a written statement to the Consultant giving the name and address of all proposed subcontractors. Said statement must contain a description of the portion of the work and materials which the proposed subcontractors are to perform and furnish and any other information tending to prove that the proposed subcontractors have the necessary facilities, skill, integrity, past experience and financial resources to perform the work in accordance with the terms and provisions of the Contract Documents.

(2) If the Consultant finds that the proposed subcontractors are qualified, it will so notify the Contractor within ten (10) working days after receipt of the aforesaid information. If the determination is to the contrary, however, the Consultant within such period will notify the Contractor of such determination and the latter, unless it decides to do such work itself and is qualified, in the Consultant's opinion, to do such work, must, within ten (10) working days thereafter, submit similar information with respect to other proposed subcontractors.

(3) The Consultant's approval of a subcontractor and/or the University's designation of a subcontractor pursuant to the provisions of the Contract Documents shall not relieve the Contractor of any of its responsibilities, duties and liabilities hereunder. The Contractor shall be solely responsible to the University for the acts or defaults of such subcontractors and of such subcontractors' officers, agents and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the Contractor to the extent of its subcontract.

(4) The Contractor shall be fully responsible for the administration, integration, coordination, direction and supervision of all of its subcontractors and of all work and it shall check all space requirements of the work and coordinate and adjust the same so that conflicts in space do not occur in the work being performed by it with its own employees and with the work being performed by its subcontractors and so that all equipment, piping, wiring, etc., can be installed, where possible, in the spaces allowed for same.

(5) No subcontractor shall be permitted to work at the site until: (a) it has furnished satisfactory evidence to the Consultant of the insurance required by law; (b) in the case of a Project involving a federal grant, it has furnished satisfactory evidence to the Consultant of the same type and amount of liability insurance as that required of the Contractor by Section 5.06 of the Agreement; and (c) except for subcontractors designated by the University pursuant to the provisions of the Information for Bidders, it has been approved by the Consultant.

(6) Within ten (10) working days after the Contractor receives payment from the University on account of a progress payment application for the percentage of the work done, it shall pay each of its subcontractors the sum contained in said payment for the percentage of said subcontractor's work, less the same amount retained therefrom by the University under the terms of the Contract Documents or in consequence of any legal proceedings or statutory liens, and less any amounts due the Contractor under the subcontract for work not performed or not properly or timely performed by the subcontractor. In the event any subcontractor is not paid by the Contractor, the former should immediately notify the University of such fact.

(7) The Contractor shall execute with each of its subcontractors and shall require all subcontractors to execute with their sub-subcontractors a written agreement which shall bind the latter to the terms and provisions of this Agreement insofar as such terms and provisions are applicable to the work to be performed by such subcontractors. The Contractor shall require all subcontractors and sub-subcontractors to promptly, upon request, file with the Consultant and the University a conformed copy of such agreements, from which the price and terms of payment may be deleted.

(8) If for sufficient reason, at any time during the progress of the work to be performed hereunder, the Consultant determines that any subcontractor or sub-subcontractor is incompetent, careless, or uncooperative, the Consultant will notify the Contractor accordingly and immediate steps will be taken by the Contractor for cancellation of such subcontract or sub-subcontract. Such termination, however, shall not give rise to any claim by the Contractor or by such subcontractor or sub-subcontractor for loss of prospective profits on work unperformed and/or work unfurnished and a provision to that effect shall be contained in all subcontracts and sub-subcontracts.

(9) No provisions of this Agreement shall create or be construed as creating any contractual relation between the University and any subcontractor or sub-subcontractor or with any person, firm or corporation employed by, contracted with or whose services are utilized by the Contractor.

Section 2.19 Shop Drawings and Samples

(1) The Contractor in accordance with the approved Shop Drawing, Submittal, Mockup, and Sample schedules and with such promptness and in such sequence as to cause no delay in the work, shall submit for the Consultant's approval all Shop Drawings and Samples called for under the Contract or requested by the Consultant.

(2) Shop Drawings and mock-ups shall establish the actual detail of the work, indicate proper relation to adjoining work, amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure, and incorporate minor changes of design or construction to suit actual conditions. Shop drawings include drawings, diagrams, schedules, product data and other information or materials specially prepared for the work by the Contractor to illustrate some portion of the work. Product data include standard illustrations, schedules, performance charts, instructions, brochures, diagrams and other information identified by the Contractor to illustrate materials or equipment for some portion of the work.

(3) All Shop Drawings, mock-ups and samples shall be thoroughly checked by the Contractor for compliance with the Contract Documents before submitting them to the Consultant for approval and all Shop Drawings shall bear the Contractor's recommendation for approval. Any Shop Drawings submitted without this stamp of approval and certification, and Shop Drawings which, in the Consultant's opinion, are incomplete, contain numerous errors or have not been checked or only checked superficially, will be returned unchecked by the Consultant for resubmission by the Contractor. In checking Shop Drawings, the Contractor shall verify all dimensions and field conditions and shall check and coordinate the Shop Drawings of any section or trade with the requirements of all other sections or trades whose work is related thereto, as required for proper and complete installation and sequence of the work.

(4) Samples must be of sufficient size or number to show the quality, type, range of color, finish and texture of the material. Each Sample shall be properly labeled to show the nature of the material, trade name of manufacturer, name and location of the work where the material represented by the Sample is to be used and the name of the Contractor submitting the Sample. Transportation charges to the Consultant must be prepaid on Samples forwarded to it.

(5) At the start of the Project, the format for submittals shall be established by the University. If an electronic method is selected for the submission and approval of submittals, the Contractor shall provide submittals in a PDF format and the Consultant will return the submittals in electronic format to the Contractor. For both hard-copy and electronic submittal formats, all submittals that require physical samples or mock-ups shall be provided in accordance with the requirements set forth in the Contract Specifications. Shop Drawings and Samples, submitted by the Contractor in accordance with the approved Shop Drawing and Sample schedule that is included in the Time Progress Schedule, will be reviewed by the Consultant within fifteen (15) working days and if satisfactory will be approved. A Shop Drawing, when approved, will be returned to the Contractor. If not satisfactory, the Drawings and Samples will be appropriately marked and returned to the Contractor for correction thereof, in which event the Contractor shall resubmit to the Consultant a corrected copy of the Shop Drawing or a new Sample, as the case may be. The Contractor shall make any correction required by the Consultant and shall appropriately note any changes or revisions on the Shop Drawing, dated to correspond with the date of the Consultant's request for the change. Upon approval of the Shop Drawing by the Consultant, the Contractor shall promptly furnish to the Consultant as many copies thereof as the Consultant may reasonably request. Should more than two (2) separate reviews of any required shop drawings or samples submitted be necessary, in the judgement of the Consultant and the University, the Contractor shall be responsible for the reasonable costs incurred by the University for such additional reviews by the Consultant.

(6) At the time of submission of a Shop Drawing or Sample, the Contractor shall inform the Consultant and the University in writing of any deviation in the Shop Drawing or Sample from the requirements of the Contract Documents. Unless such deviation is specifically noted by the Contractor with a notation that such deviation will result in extra work for which the Contractor requests payment, the Contractor shall be deemed to have waived any claim for extra work, additional compensation or payment or an extension of time with respect to all work shown on, described in or related to the Shop Drawing or Sample.

(7) The Consultant's approval of Shop Drawings or Samples is for design only and is not a complete check on the method of assembly, erection or construction. Approval shall in no way be construed as: (a) permitting any departure whatsoever from the Contract Documents, except where the Contractor, in accordance with the provisions of paragraph 6 of this Section, has previously notified the University and the Consultant of such departure; (b) relieving the Contractor of full responsibility for any error in quality of materials, details, dimensions, omissions or otherwise that may exist; (c) relieving the Contractor of full responsibility for adequate field connections, erection techniques, bracing or deficiencies in strength; (d) relieving the Contractor of full responsibility for satisfactory performance of all work and coordination with the work of all subcontractors and other contractors; or (e) permitting departure from additional details or instructions previously furnished by the Consultant.

(8) No work requiring a Shop Drawing or Sample shall be commenced until a Shop Drawing or Sample is approved by the Consultant and all such work shall be: (a) in accordance with the approved Shop Drawing, provided the latter conforms in all respects to the Contract Documents or to such deviations therefrom as have been previously noted by the Contractor in accordance with the provisions of paragraph 6 of this Section; and (b) in conformance in all respects to the sample furnished to and approved by the Consultant and, unless otherwise specified, as new and of good quality.

(9) The Contractor may be required to provide professional services that constitute the practice of architecture or engineering when specifically required by the Contract Documents for a portion of the work or the Contractor needs to provide such services in order to carry out its responsibilities for construction means, methods, techniques, sequences and procedures. When professional services are required in the Contract Documents, the Consultant will specify all performance and design criteria that such services must satisfy. The University and Consultant shall be entitled to rely on the adequacy, accuracy and completeness of the professional services, certifications, and approvals performed or provided by design professionals working for the Contractor.

(10) Contractor agrees that the University may deduct from any application for payment made by the Contractor, any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University together with a markup upon such hard costs in the amount of 15% in the review or evaluation of any substitutions for methods, products or performance pursuant to this Section 2.19.

Section 2.20 Equivalents - Approved Equal

(1) Equivalents or Approvals - General

a. The words "similar and equal to", or equal", “equivalent" and such other words of similar content and meaning shall for the purposes of this Agreement be deemed to mean similar and equivalent to one of the named products. For the purposes of subdivisions (1) and (2) of this Section and for the purposes of the Bidding Documents, the word "products" shall be deemed to include the words “articles", "materials", "items", "equipment" and “methods". Whenever in the Contract Documents one or more products are specified, the words "similar and equal to" shall be deemed inserted.

b. Whenever any product is specified in the Contract Documents by a reference to the name, trade name, make or catalog number of any manufacturer or supplier, the intent is not to limit competition, but to establish a standard of quality which the Consultant has determined is necessary for the Project. A Contractor may at its option use any product other than that specified in the Contract Documents provided the same is approved by the Consultant in accordance with the procedures set forth in subdivision (2) of this Section. In all cases the Consultant shall be the sole judge as to whether a proposed product is to be approved and the Contractor shall have the burden of proving, at its own cost and expense, to the satisfaction of the Consultant, that the proposed product is similar and equal to the named product. In making such determination the Consultant may establish such objective and appearance criteria as it may deem proper that the proposed product must meet in order for it to be approved.

c. Nothing in the Contract Documents shall be construed as representing, expressly or implied, that the named product is available or that there is or there is not a product similar and equal to any of the named products and the Contractor shall have and make no claim by reason of the availability or lack of availability of the named product or of a product similar and equal to any named product.

d. The Contractor shall have and make no claim for an extension of time or for damages by reason of the time taken by the Consultant in considering a product proposed by the Contractor or by reason of the failure of the Consultant to approve a product proposed by the Contractor.

e. Requests for approval of proposed equivalents will be received by the Consultant only from the Contractor.

f. Approval shall in no way be construed as: (a) permitting any departure whatsoever from the Contract Documents, (b) relieving the Contractor of full responsibility for any error in quality of materials, details, dimensions, sequence of work, omissions or otherwise that may exist, (c) relieving the Contractor of full responsibility for adequate field connections, erection techniques, bracing or deficiencies in strength, (d) relieving the Contractor of full responsibility for satisfactory performance of all work to achieve a functionally complete facility or result and coordination with the work of all subcontractors and other contractors or (e) permitting departure from additional details or instructions previously furnished by the Consultant.

g. Contractor agrees that the Contractor approves and authorizes the deduction from Contractor’s applications for payment any and all costs incurred by the Construction Manager, Consultant, Design Professional or otherwise in evaluating Contractor’s submissions under this Section 2.20, together with a markup upon such hard costs in the amount of 15%.

(2) Equivalents or Approvals After Bidding

a. Any and all submissions for “or equal” products which are submitted by the Contractor after award of the Contract must be made by the Contractor within ninety (90) calendar days after the date of award. Contractor agrees that it waives and relinquishes the right, claim or privilege, if any, to submit “or equal” proposals if such are made ninety (90) calendar days after the date of award of the Contract to the Contractor.

b. Requests for approval of proposed equivalents will be considered by the Consultant after bidding only in the

following cases: (a) the named product cannot be obtained by the Contractor because of strikes, lockouts, bankruptcies or discontinuance of manufacture and the Contractor makes a written request to the Consultant for consideration of the proposed equivalent within ten (10) calendar days of the date it ascertains it cannot obtain the named product; or (b) the proposed equivalent is superior, in the opinion of the Consultant, to the named product; or (c) the proposed equivalent, in the opinion of the Consultant, is equal to the named product and its use is to the advantage of the University, e.g., the University receives an equitable credit, acceptable to it, as a result of the estimated cost savings to the Contractor from the use of the proposed equivalent or the University determines that the Contractor has not failed to act diligently in placing the necessary purchase orders and a savings in the time required for the completion of the construction of the Project should result from the use of the proposed equivalent.

c. Where the Consultant pursuant to the provisions of this subdivision approves a product proposed by a Contractor and such proposed product requires a revision or redesign of any part of the work covered by this Agreement, all such revision and redesign and all new Drawings and details required therefor shall be subject to the approval of the Consultant and shall be provided by the Contractor at its own cost and expense.

Where the Consultant pursuant to the provisions of this Section approves a product proposed by a Contractor and such proposed product requires a different quantity and/or arrangement of duct work, piping, wiring, conduit or any other part of the work from that specified, detailed or indicated in the Contract Documents, the Contractor shall provide the same at its own cost and expense.

(3) Contractor agrees that the University may deduct from any application for payment made by the Contractor any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University, together with a markup upon such hard costs in the amount of 15%, in the consideration or evaluation of any substitutions for methods, products or performance pursuant to this Section 2.20.

Section 2.21 Patents, Trademarks and Copyrights

The Contractor acknowledges that the Contract consideration includes all royalties, license fees and costs arising from patents or trademarks in any way involved in the work; provided, however, that the Contract consideration shall not be deemed to have included therein any royalty, license fee or cost arising from a patent or trademark for a design prepared by the Consultant and neither the Contractor nor the University shall have any liability in connection therewith. Where the Contractor is required or desires to use any product, device, material or process covered by patent or trademark, the Contractor shall indemnify and save harmless the University and the State of New York from any and all claims, actions, causes of action or demands, for infringement by reason of the use of such patented product, device, material or process, and shall indemnify the University and the State of New York from any cost, liability, damage and expense, including reasonable attorneys' fees and court costs, which it may be obligated to incur or pay by reason of any claim or infringement at any time both before or after the University's final acceptance of all the work to be performed under the Contract.

Section 2.22 Possession Prior to Completion

If before the final completion of all the work it shall be deemed advisable or necessary by the University to take over, use, occupy or operate any part of the completed or partly completed work or to place or install therein equipment and furnishings, the University, upon reasonable written notice to the Contractor, shall have the right to do so and the Contractor will not in any way interfere therewith or object to the same. Such action by the University shall in no way affect the obligations of the Contractor under the terms and provisions of the Contract Documents and the Contractor acknowledges that such action by the University does not in any way evidence the completion of the work or any part thereof or in any way signify the University's acceptance of the work or any part thereof. The Contractor agrees to continue the performance of all work covered by the Contract in a manner which will not unreasonably interfere with such takeover, use, occupancy, operation, placement or installation.

Section 2.23 Completion and Acceptance

(1) Partial Completion

If before the final completion of all the work any portion of the permanent construction has been satisfactorily completed and the same will be immediately useful to the University, the latter may, by written notice, advise the Contractor that it accepts such portion of the work. Such action by the University shall in no way affect the obligations of the Contractor under the terms and provisions of the Contract with respect to any work not so completed and accepted. The partial completion of any portion of the Contractor's work by the University, the

Campus or the Consultant, shall not impact the assessment of liquidated damages or actual costs for delays or disruption to the Project caused by the Contractor, its subcontractors or vendors.

(2) Substantial Completion

When all the Work covered by the Contract is substantially completed, as defined in Section 1.01, the Contractor shall give written notice thereof to the University and the Consultant. The latter will then promptly make an inspection of the work and, if they shall determine that all the work is substantially completed, they shall so advise the Contractor. Such action shall in no way affect the obligations of the Contractor under the terms and provisions of the Contract with respect to any uncompleted (including untested or deferred work), unaccepted or corrective work or in any way affect, limit or preclude the issuance by the Consultant, from time to time thereafter, of "Punch Lists", i.e., lists of uncompleted or corrective work which the Contractor is to promptly complete and/or correct. In the judgement of the University, should more than two (2) separate inspections of the Work be necessary, the Contractor agrees that the University may deduct from any application for payment made by the Contractor, any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University together with a markup upon such hard costs in the amount of 15% for all such additional inspections.

The Contractor must fully, completely and acceptably perform all Punch List work and any other work subsequently discovered remaining to be completed or corrected, within ninety (90) calendar days of Substantial Completion or within such other timeframe stipulated by the University or Consultant. Failure to complete the Punch List within the time so designated hereunder may be deemed default on the part of the Contractor.

(3) Final Completion and Acceptance

After the completion of all the work the Contractor shall give written notice to the University and the Consultant that all the work is ready for inspection and final acceptance. The University and the Consultant shall promptly make such inspection and, if they shall determine that all the work has been satisfactorily completed, the University shall thereupon by written notice advise the Contractor that it accepts such work. In the judgement of the University, should more than two (2) separate inspections of the Work be necessary, the Contractor agrees that the University may deduct from any application for payment made by the Contractor, any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University together with a markup upon such hard costs in the amount of 15% for all such additional inspections.

Section 2.24 Record Drawings

(1) At the start of the Project, the format for Record Drawings shall be established by the University. Prior to acceptance by the University of all work covered by the Contract, the Contractor shall furnish to the Consultant one (1) set of current Contract Drawings on which the Contractor has recorded, using colored pencil for hard copy format or electronic editing tool in contrasting color for electronic format, in a neat and workmanlike manner, all instances where actual field construction differs from work as indicated on the Contract Drawings. These "Record". Drawings shall show the following information: (a) all significant changes in plans, sections, elevations and details, such as shifts in location of walls, doors, windows, stairs and the like made during construction; (b) all significant changes in foundations, columns, beams, openings, concrete reinforcing, lintels, concealed anchorages and "knock-out" panels made during construction; (c) final location of electric panels, final arrangement of electric circuits and any significant changes made in electrical design as a result of Change Orders, Field Orders or job conditions; (d) final location and arrangement of all mechanical equipment and major concealed plumbing, including, but not limited to, supply and circulating mains, vent stacks, sanitary and storm water drainage; (e) final location and arrangement of all underground utilities, connections to building and/or rerouting of existing utilities, including, but not limited to, sanitary, storm, heating, electric, signal, gas, water and telephone: and (f) final make and model for all significant equipment and devices listed in the specifications. The Contractor shall also provide an electronic version as determined by the Consultant.

(2) Periodically during the work, the Consultant may request submission of a progress set of Record Drawings for review and advise the Contractor of errors or omissions, if any, that must be corrected or completed prior to final submission of the Record Drawings. Shop Drawings shall not be acceptable as Record Drawings.

(3) The Contractor shall submit the Record Drawings to the Consultant at least fifteen (15) days prior to the date of Substantial Completion. The Consultant will then review the Record Drawings and, if they shall determine that the Record Drawings represent the actual field construction being completed, they shall so advise the

Contractor. If not satisfactory, the Record Drawings will be appropriately marked and returned to the Contractor for correction thereof, in which event the Contractor shall promptly correct and resubmit to the Consultant a corrected copy of the Record Drawings. Acceptance of the Record Drawings by the University is a condition precedent to the Contractor's entitlement to receive Final Payment.

Section 2.25 Guarantees

(1) The Contractor, at the convenience of the University, shall remove, replace and/or repair at its own cost and expense any defects in workmanship, materials, ratings, capacities or characteristics occurring in or to the work covered by the Contract within one (1) year or within such longer period as may otherwise be provided in the Contract, the period of such guarantee to commence with the University's final acceptance of all work covered under the Contract or at such other date or dates as the University may specify prior to that time, and the Contractor, upon demand, shall pay for all damage to all other work resulting from such defects and all expenses necessary to remove, replace and/or repair such other work which may be damaged in removing, replacing or repairing the said defects. The obligations of the Contractor under the provisions of this paragraph or any other guarantee provisions of the Contract Documents are not limited to the monies retained by the University under the Contract.

(2) Unless such removal, replacement and/or repair shall be performed by the Contractor within ten (10) working days after it receives written notice from the University specifying such defect, or if such defect is of such a nature that it cannot be completely removed, repaired and/or replaced within said ten (10) day period and the Contractor shall not have diligently commenced removing, repairing and/or replacing such defect within said ten (10) day period and shall not thereafter with reasonable diligence and in good faith proceed to do such work, the University may employ such other person, firm or corporation as it may choose to perform such removal, replacement and/or repair and the Contractor agrees, upon demand, to pay to the University all amounts which it expends for such work.

Section 2.26 Default of Contractor

(1) In addition to those instances specifically referred to in other Sections hereof, the University shall have the right to declare the Contractor in default of the whole or any part of the work if:

a. The Contractor becomes insolvent; or if

b. The Contractor makes an assignment for the benefit of creditors pursuant to the statutes of the State of New York; or if

c. A voluntary or involuntary petition in bankruptcy is filed by or against the Contractor; or if

d. A receiver or receivers are appointed to take charge of the Contractor's property or affairs; or if

e. The Contractor fails to commence work when notified to do so by the Consultant; or if

f. The Contractor shall abandon the work; or if

g. The Contractor shall refuse to proceed with the work or extra work when and as directed by the Consultant or the University; or if

h. The Contractor shall without just cause reduce its working force to a number which, if maintained, would be insufficient, in the opinion of the University, to complete the work in accordance with the approved time progress schedule, and shall fail or refuse to sufficiently increase such working force when ordered to do so by the Consultant; or if

i. The Contractor shall sublet, assign, transfer convey, or otherwise dispose of the Contract other than as herein specified; or if

j. The University shall be of the opinion that the Contractor is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the work, or the award of necessary subcontracts, or the placing of necessary material and equipment orders; or if

k. The University shall be of the opinion that the work cannot be completed within the time herein provided therefor or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the University's opinion, attributable to conditions within the Contractor's control; or if

l. The work is not completed within the time herein provided therefor or within the time to which the Contractor may be entitled to have such completion extended; or if

m. The University shall be of the opinion that the Contractor is or has been willfully or in bad faith violating any of the provisions of this Agreement;

n. The University shall be of the opinion that the Contractor is not or has not been executing the Contract in good faith and in accordance with its terms; or if

o. At any time during the period of the Agreement, insurance as required is not in effect or proof thereof is not provided to the University.

(2) Before the University shall exercise its right to declare the Contractor in default by reason of the conditions set forth in the above items *a, b, c, d, e, f, g, h ,i, j, k, l,* m, n and o, it shall give the Contractor three (3) working days' notice of its intention to declare the Contractor in default and unless, within such three (3) day period, the Contractor shall make arrangements, satisfactory to the University, to correct and/or eliminate the conditions set forth in the University's aforesaid notice, the Contractor may be declared in default at the expiration of such three (3) day period or at the expiration of such longer period of time as the University may determine.

(3) The right to declare in default for any of the grounds specified or referred to shall be exercised by the University sending the Contractor a written notice setting forth the ground or grounds upon which such default is declared. Upon receipt of notice that it has been declared in default, the Contractor shall immediately discontinue all further operations under the Contract and shall immediately quit the site, leaving untouched all plant, materials, equipment, tools and supplies then on site.

(4) The University, after declaring the Contractor in default, may then have the work completed by such means and in such manner, by contract, with or without public letting, or otherwise, as it may deem advisable, utilizing for such purpose such of the Contractor's plant, materials, equipment, tools and supplies remaining on the site, and also such subcontractors as it may deem advisable, or it may call upon the Contractor's surety at its own expense to do so.

(5) In the event that the University declared the Contractor in default of the work or any part of the work, the Contractor, in addition to any other liability to the University hereunder or otherwise provided for or allowed by law, shall be liable to the University for any costs it incurs for additional architectural and engineering services necessary, in its opinion, because of the default and the total amount of liquidated damages from the date when the work should have been completed by the Contractor in accordance with the terms hereof to the date of actual completion of the work, both of which items shall be considered as expenses incurred by the University in completing the work and the amount of which may be charged against and deducted out of such monies as would have been payable to the Contractor or its surety if the work had been completed without a default.

(6) If the University completes the work, the Consultant shall issue a certificate stating the expenses incurred in such completion, including the cost of re-letting. Such certificate shall be final, binding and conclusive upon the Contractor, its surety, and any person claiming under or through the Contractor, as to the amount thereof.

(7) The expense of such completion, as so certified by the Consultant, shall be charged against and deducted out of such monies as would have been payable to the Contractor if it had completed the work; the balance of such monies, if any, subject to the other provisions of the Contract, to be paid to the Contractor without interest after such completion. Should the expense of such completion, so certified by the Consultant, exceed the total sum which would have been payable under the Contract if the same had been completed by the Contractor, any such excess shall be paid by the Contractor to the University upon demand.

(8) In the event the University shall determine to complete the work without calling upon the Contractor's surety to do so, the Contractor shall not be entitled, from and after the effective date of the declaration of the default, to receive any further payment under the Contract until the said work shall be wholly completed and accepted by the University.

(9) In case the University shall declare the Contractor in default as to a part of the work only, the Contractor shall discontinue such part, shall continue performing the remainder of the work in strict conformity with the terms of the Contract, and shall in no way hinder or interfere with any other contractors or persons whom the University may engage to complete the work as to which the Contractor was declared in default.

(10) The provisions relating to declaring the Contractor in default as to the entire work shall be equally applicable to a declaration of partial default, except that the University shall be entitled to utilize for completion of the part of the work as to which the Contractor was declared in default only such plant, materials, equipment, tools and supplies as had been previously used by the Contractor on such part.

(11) In completing the whole or any part of the work, the Consultant and the University shall have the power to depart from, change or vary the terms and provisions of the Contract; provided, however, that such departure, change or variation is made for the purpose of reducing the time or expense of such completion. Such departure, change or variations, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the Consultant's certificate of the cost of completion, nor shall it constitute a defense to any action to recover the amount by which such certificate exceeds the amount which would have been payable to the Contractor hereunder but for its default.

(12) The provisions of this Section shall be in addition to any and all other legal or equitable remedies provided by this Agreement and otherwise applicable by law.

Section 2.27 Termination for Convenience

(1) The performance of work under this Agreement may be terminated by the University, in whole or in part, whenever the University shall determine that such termination is in the best interest of the University. Any such termination shall be effected by a notice in writing to the Contractor specifying the date upon which such termination shall become effective and the extent to which performance of the Contract shall be terminated. Such termination shall be effective on the date and to the extent specified in said notice.

(2) Upon receipt of a notice of termination, and-except as otherwise directed in writing by the University, the Contractor shall:

a. Discontinue all work and the placing of all orders for materials and facilities otherwise required for the performance thereof,

b. Cancel all existing orders and subcontracts to the extent such orders and subcontracts relate to the performance of work terminated by the notice of termination;

c. Take such action as may be necessary to secure to the University the benefits of any rights of the Contractor under orders or subcontracts which relate to the performance of work terminated by the notice of termination, including, but not limited to, the assignment to the University, in the manner and to the extent directed by the University, all the right, title and interest of the Contractor under the orders or subcontracts so terminated and cancelled. In the event of such assignment, the University shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination and cancellation of such orders and subcontracts;

d. Transfer title and deliver to the University, in accordance with the direction of the University, all materials, supplies, work in process, facilities, equipment, machines or tools produced as a part of or acquired by the Contractor in connection with the work terminated by said notice, and all plans, Drawings, Working Drawings, sketches, Specifications and information for use in connection therewith; provided, however, that the Contractor may retain any of the foregoing if it so elects and foregoes reimbursement therefor;

e. Take such action as may be necessary or as the Consultant or the University may prescribe for the protection and preservation of all property in the possession or control of the Contractor in which the University, under the provisions of the Contract, has or may acquire an interest.

(3) Notwithstanding the foregoing, should the notice of termination relate to only a portion of the work covered by the Contract, the Contractor will proceed with the completion of such portions of the work as are not terminated.

(4) The University will pay and the Contractor shall accept, in full consideration for the performance and completion of the portions of the work as are not terminated, a sum calculated by determining the percentage the portions of the work not terminated bear to the total amount of the work covered by the Contract, and by multiplying the Contract consideration by such percentage - the product thereof being the amount to be paid to the Contractor. The University shall determine the amount of such consideration in accordance with the foregoing.

(5) Upon compliance by the Contractor with the foregoing provisions of this Section and subject to deductions for payments previously made, the University, for the portions of the work terminated, shall compensate the Contractor as follows:

a. By reimbursing the Contractor for actual expenditures made with respect to such work, including expenditures made in connection with any portion thereof which may have been completed prior to termination, as well as expenditures made after termination in completing those portions of the work covered by the Contract which the Contractor may have been required by the notice of termination to complete. The University shall determine the allowability and amount of such expenditures.

b. By reimbursing the Contractor for all actual expenditures made, with the prior written approval of the University or pursuant to a court judgment, in settling or discharging any outstanding contractual obligations or commitments incurred or entered into by the Contractor in good faith with respect to the Contract and resulting from the termination thereof.

c. By reimbursing the Contractor for all actual expenditures made after the effective date of the notice of termination resulting from or caused by the Contractor taking necessary action or action prescribed by the Consultant or the University for the protection and preservation of all property in the possession or control of the Contractor in which the University, under the provisions of the Contract, has or may acquire an interest.

d. By paying the Contractor a markup, which is to be calculated in the same manner as that provided for in subdivision c of paragraph (1) of Sections 4.02 and 4.05A for extra work, on the foregoing expenditures, which markup is to cover the Contractor's overhead and profit; provided, however, that if it appears that the Contractor would have sustained a loss on the entire Contract had it been completed, said markup shall be reduced by one-third.

(6) The sum of all amounts payable under this Section, plus the sum of all amounts previously paid by the University under the provisions of the Contract, shall not exceed the amount of the Contract consideration. In no event shall the Contractor be entitled to any payment for loss of anticipated profits on uncompleted work and the University shall not be liable for same.

(7) Termination by the University under the provisions of this Section shall be without prejudice to any claims or rights which the University may have against the Contractor. The University may retain from the amount due to the Contractor under the provisions of this Section such monies as may be necessary to satisfy any claim which the University may have against the Contractor in connection with the Contract; provided, however, that the University's failure to retain such monies shall not be deemed a waiver of any of its rights or claims against the Contractor.

(8) Notwithstanding the foregoing, where the Contractor and the Consultant can agree upon another method of determining the amount of the consideration to be paid to the Contractor under the provisions of this Section, such method, subject to the approval of the University, may, at the option of the University, be substituted for the method set forth above.

Article III
Time of Performance

Section 3.01 Commencement, Prosecution and Completion of Work

(1) The Contractor agrees that it will begin the work herein embraced upon receipt of notice to proceed, unless the University consents in writing, to begin at a different date, and that it will prosecute the same with such diligence that all work covered by the Contract shall be substantially completed and performed on or before the time specified on page one of the Agreement.

(2) The Contractor further agrees that time is of the essence in this Agreement and that all the work shall be prosecuted in such manner and with sufficient plant and forces to complete all work timely.

Section 3.02 Time Progress Schedule

(1) To show compliance with the requirements of Section 3.01 of the Agreement, provide and maintain a Time Progress Schedule in accordance with the General Requirements, Special Conditions, Section paragraph titled "Project Schedule". Unless otherwise accepted by the University, the Time Progress Schedule shall be strictly adhered to by the Contractor. The time for substantial completion shall be on or before the time specified on page one of the Agreement.

(2) If through the fault of the Contractor or any subcontractor the Contractor shall fail to adhere to the time progress schedule, it must promptly adopt such other and additional means and methods of construction as will make up for the time lost and will assure completion in accordance with such schedule.

(3) The failure of the Contractor to submit a Time Progress Schedule, the University's or the Consultant's acceptance of the Contractor's time progress schedule or lack of such acceptance, the means and/or methods of construction employed by the Contractor, including any revisions thereof, and/or its failure to revise the same shall not relieve the Contractor of its obligation to accomplish the result required by the Contract in the time specified on page one of the Agreement, nor shall the exercise of the Consultant's or the University's right to reject any portion of the work, create or give rise to any claim, action or cause of action, legal, equitable or otherwise, against the Consultant or the University.

4) The failure of the Contractor to submit and maintain a Time Progress Schedule in accordance with the General Requirements shall be deemed to be a waiver by the Contractor of all claims for additional compensation or damages as a result of any condition which is an alleged cause of delay in the completion of the work.

Section 3.03 Time Progress Schedule for Shop Drawings and Samples

The Contractor shall include activities for preparation and submission of all Shop Drawings, mock-ups and Samples in the Time Progress Schedule in Section 3.02.

Section 3.04 Notice of Conditions Causing Delay

(1) Within ten (10) working days after the commencement of any condition which is causing or may cause delay in completion or require Contractor to request an extension of time, the Contractor must notify the Consultant and the University in writing of the effect, if any, of such condition upon the Time Progress Schedule, and must state why and in what respects, if any, the condition is causing or may cause such delay.

(2) Contractor agrees that an express condition precedent to Contractor's entitlement to any extension of time on the project shall be full and complete compliance to the satisfaction of the University with the Contractor's obligations in Section 3.06, Contractor's Progress Reports. Failure to submit proper Contractor's progress reports in appropriate and timely fashion shall be deemed a waiver and relinquishment of any right, claim or privilege to obtain an extension of time for the performance of the Contractor's work.

(3) Failure to strictly comply with this requirement may, in the discretion of the University, be deemed sufficient cause to deny any extension of time on account of delay in completion arising out of or resulting from any change, extra work, suspension, or other condition.

(4) Except as otherwise set forth in this Section 3.04 all procedures set forth in Sections 2.02 and 2.03 of this Agreement shall be complied with by the Contractor. Furthermore, full and complete compliance with the requirements of this Article III is a condition precedent to the Contractor's entitlement to receive an extension of time.

Section 3.05 Extension of Time

(1) Within ten (10) working days after the commencement of any condition which is causing or may cause the Contractor to incur, require or otherwise need an extension of time, the Contractor shall notify the Consultant and the University of such condition. Full and complete compliance with this paragraph 3.05(1) is a condition precedent to the Contractor obtaining an extension of time for performance of any portion or all of its work.

(2) An extension or extensions of time for the completion of the work may be granted by the University subject to the provisions of this Section, but only upon written application therefor by the Contractor to the University and the Consultant.

(3) An application for an extension of time must set forth in detail the source and the nature of each alleged cause of delay in the completion of the work, the date upon which each such cause of delay began and ended and the number of days of delay attributable to each of such causes. It must be submitted prior to completion of the work.

(4) If such an application is made, the Contractor may be entitled to an extension of time for delay in completion of the work caused solely: (a) by the acts or omissions of the University, its trustees, officers, agents or employees; or (b) by the acts or omissions of other contractors, not including subcontractors of the Contractor, on this Project; or (c) by unforeseeable supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes).

(5) The Contractor may, however, be entitled to an extension of time for such causes only for the number of calendar days of delay which the University may determine to be due solely to such causes, and then only if the Contractor shall have strictly complied with all of the requirements of this Section and Section 3.04. The University shall make such determination within ninety (90) calendar days after receipt of the Contractor's application for an extension of time; provided, however, said application complies with the requirements of this Section.

(6) The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the work as determined by the University, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the Contractor or of its subcontractors or material-men and would of itself (irrespective of the concurrent causes) have delayed the work, no extension of time will be allowed for the period of delay resulting from such an act, fault or omission.

(7) The granting of an application for an extension of time for causes of delay other than those herein referred to shall be entirely within the discretion of the University.

(8) If the Contractor shall claim to have sustained any damages by reason of delays, extraordinary or otherwise, or hindrances which it claims to be due to any action, omission, direction or order by the University or the Consultant, the Contractor shall be entitled only to an extension of time as hereinabove provided and shall not have or assert any claim or prosecute any suit, action, cause of action or proceeding against the University based upon such delays or hindrances, unless such delays or hindrances were caused by the University's bad faith or its willful, malicious, or grossly negligent conduct, or uncontemplated delays, or delays so unreasonable that they constitute an intentional abandonment of the Contract by the University, or delays resulting from the University's breach of a fundamental obligation of the Contract.

(9) The Contractor shall not be entitled to an extension of time for the performance of any or all of the Work set forth in allowances to the Contract. All allowance work shall be performed in accordance with the Contractor's schedule.

Section 3.06 Contractor's Progress Reports

After commencement of the work the Contractor shall furnish the Consultant with written monthly reports setting forth the condition and progress of the work, the percentage of each part of the work that has been finished, those parts of the work which have been completed within the scheduled time and those parts of the work which have not been finished within the scheduled time, and the general progress of the work that is being performed away from the site and the approximate date when such work will be finished and delivered to the site. Contractor agrees that compliance with this Section 3.06 is an express condition precedent to the Contractor's right, claim or entitlement to obtain an extension of

time for the performance of the Contractor's work. Failure to comply with this Section 3.06 shall be a waiver and relinquishment of all such rights, claims and privileges to request or obtain an extension of time for the performance of Contractor's work.

Article IV
Payment

Section 4.01 Compensation to Be Paid Contractor

The University shall pay to the Contractor and the latter shall accept as full and complete payment for the performance of this Agreement, subject to additions or deductions as provided herein, the sum of **dollars ($«Total_Bid»),** which sum is the amount of the Contract consideration.

Section 4.02 Value of Omitted and Extra Work

(1) The amount by which the Contract consideration is to be increased or decreased by any Change Order or Field Order shall be determined by the University by one or more of the following methods:

a. By applying the applicable price or prices set forth on the attached Schedule "I" of this Agreement or by applying a unit price agreed to by both parties. Subject to the provisions of Section 4.04, this method must be used if the Contract Documents contain applicable unit prices.

b. By estimating the fair and reasonable cost of: (i) labor, including all wages, required wage supplements and insurance required by law (workers' compensation, social security, disability, unemployment, etc.) paid to or on behalf of foremen, workers and other employees below the rank of superintendent directly employed at the site of the Project; (ii) materials; and (iii) equipment, excluding hand tools, which, in the judgment of the University, would have been or will be employed exclusively and directly on the omitted work or extra work, as the case may be; and, in the case of extra work, where the same is performed directly by the Contractor, by adding to the total of such estimated costs a sum equal to 15 percent thereof, but, where the extra work is performed by a subcontractor, by adding a sum equal to 15 percent of said costs for the benefit of such subcontractor, and by adding, for the benefit of the Contractor (no further allowance will be made where extra work is performed by the sub-subcontractor), an additional sum equal to 10 percent of the first $10,000 of the above-estimated costs, including the subcontractor's percentage override, plus 5 percent of the next $90,000 of the total of said items, plus 3 percent of any sum in excess of $100,000 of the total of said items. There is no markup on the premium portion of overtime labor. For the purposes of the aforesaid percentage overrides, the words "extra work" shall be defined as a complete item of added, modified or changed work as described in the Consultant's written instructions to the Contractor. Such "extra work" may include the work of one or more trades and/or subcontractors or sub-subcontractors and shall include all labor, materials, plant, equipment, tools and all incidentals directly and/or indirectly necessary, related, involved in or convenient to the successful completion of the extra work item. Where the Consultant's aforesaid written instructions to the Contractor involve both an increase and a reduction in similar or related work, the above percentage overrides will be applied only on the amount, if any, the cost of the increased work exceeds the cost of the reduced work.

No overhead and profit shall be retained by the Contractor on the cost of work determined by the method provided in Subparagraph (1)a.

All profit, overhead and expense of whatsoever kind and nature, other than those set forth above in items (i) through (iii), of the Contractor, its subcontractors and sub-subcontractors, are covered by the aforesaid percentage overrides and no additional payment therefor will be made by the University.

The University may make such cost estimate either before or after the extra work is completed by the Contractor.

c. By determining the actual cost of the extra work in the same manner as in the above subdivision b except that actual costs of the Contractor shall be utilized in lieu of estimated costs. The University shall have the option to utilize this method provided it notifies the Contractor of its intent to do so prior to the time the Contractor commences performance of such extra work.

(2) Irrespective of the method used or to be used by the University in determining the value of a Change Order or Field Order, the Contractor, within fifteen (15) working days after a request for the same, must submit to the University

and the Consultant a detailed breakdown of the Contractor's estimate of the value of the omitted and/or extra work in a format approved by the University.

(3) Equipment Watch Rental Rate Blue Book (published online by Intertec Penton Media, Inc.) or other published rates as approved by the University in writing, will be utilized for the equipment rental pricing. For the purposes of paragraph (1) hereof, the cost of equipment shall be determined, irrespective of the actual price for any rental or actual cost associated with such equipment as follows: take the monthly rate listed in Equipment Watch and dividing the same by 176 hours to establish an hourly rate and then multiplying such hourly rate by the actual number of hours that the equipment was used. The Contractor will submit an actual rental invoice, or acceptable quotation from a bonafide equipment rental supplier for rented equipment when equipment is not owned by the Contractor. The equipment rental supplier cannot be an “affiliate” of the Contractor, nor in any way be related to the Contractor. If submitted invoices/quotations are acceptable to the University, the Contractor will be reimbursed the actual rental cost including sales tax and appropriate mark-up. If no listing of rates for an item of equipment is contained in Equipment Watch, the University shall determine the reasonable rate of rental of the particular item of equipment by such other means as it finds appropriate. The edition Equipment Watch to be used shall be that in effect on the date of the receipt of bids for this Agreement. None of the provisions of Equipment Watch shall be deemed referred to or included in this Agreement excepting only the aforesaid monthly rates. To the cost of equipment as determined above, there is to be added the actual cost of gasoline, oil, grease and maintenance required for operation of such equipment and, in the case of equipment utilized only for extra work when, in the opinion of the Consultant, suitable equipment therefor was not available on the site, the reasonable cost of transporting said equipment to and from the site. Notwithstanding the foregoing, if the Consultant should determine that the nature or size of the equipment used by the Contractor in connection with the extra work is larger or more elaborate, as the case may be, than the size or nature of the minimum equipment determined by the Consultant to be suitable for the extra work, the cost of equipment will not be based upon the equipment used by the Contractor but instead will be based on the smallest or least elaborate equipment determined by the Consultant to have been suitable for the performance of the extra work.

(4) Unless otherwise specifically provided for in a Change Order or Field Order, the compensation specified therein for extra work includes full payment for both the extra work covered thereby and for any damage or expense caused the Contractor by any delays to other work to be done under the Contract resulting from or on account of said extra work, and the Contractor waives all rights to any other compensation for said extra work, damage or expense.

Section 4.03 Adjustment for Bond and Insurance Premiums

Upon final acceptance of the work to be performed under this Agreement, the University may adjust the Contract consideration to reflect any changes in the cost of all required Bonds and liability and builder's risk insurance premiums which the Contractor had to pay for on all extra work and would have had to furnish and pay for on all omitted work. Unless such cost is agreed upon by the University and the Contractor, the University may calculate and determine the amount of the adjustment in the Contract consideration by estimating such costs. There is no markup on bond or insurance premium adjustment.

Section 4.04 Unit Prices

(1) Except as otherwise provided in the second paragraph of this Section, the unit prices, set forth on the attached Schedule "I" of this Agreement, will be binding upon both the University and the Contractor in determining the value of omitted and/or extra work, and, in the case of extra work, such unit prices shall be deemed to include all profit, overhead and expenses of whatsoever kind and nature of the Contractor, its subcontractors and sub-subcontractors, and the Contractor agrees that it shall make no claim for any profit, overhead, expense or percentage override in connection therewith.

(2) Where said Schedule "I" sets forth a unit price for added and/or deducted work, the University shall have the option, whenever it is found that the quantity of changed work varies by more than 15 percent from the quantity that is stated or that can be determined by the Contract Documents at the time of execution thereof, to accept or reject such unit price for the quantity that the changed work varies by more than 15 percent from the stated or determinable quantity. Where a quantity is not specifically stated in the Contract Documents, the University's determination of the amount of said quantity included in the Contract Documents shall determine the applicability of this paragraph. Where the University, pursuant to the foregoing provisions, exercises its aforesaid option, the amount of the increase or decrease in the Contract consideration for the quantity of work which varies by more

than 15 percent from the stated or determinable quantity shall be determined in accordance with the provisions of Section 4.02 of the Agreement as if there was no unit price therefor set forth in said Schedule "I".

Section 4.05 Allowances

(1) The Contractor acknowledges that the Contract consideration includes the allowances set forth on the attached Schedule "II" and "III" of this Agreement and, except for quantitative and field order allowances, it agrees to cause the work covered thereby to be done by such contractors for such sums as the University may direct. Where cash allowances are provided, the allowances shall be deemed to include the purchase of the materials and/or equipment and the delivery of same to the job site. Unless otherwise specified in the Contract Documents, cash allowances do not include the proper installation of the materials and/or equipment or the connection for final utilities thereto; the cost of said installation and/or connection having been included in the amount of the Contract consideration.

(2) The Contractor acknowledges that the Contract consideration includes such sums for expenses and profit on account of cash allowances as it deems proper and that it shall make no claim for expenses or profit or any percentage override in addition thereto; said items having been included in the amount of the Contract consideration.

(3) In the event any of the cash allowances listed below are either higher or lower than the cost of having the work done in accordance herewith, the Contract consideration shall be adjusted to reflect such variance, the amount of said adjustment to be the difference between the amount of the allowance and the actual cost of performing the work covered thereby.

(4) When quantitative allowances are provided, progress payments thereof to the Contractor will be based upon the applicable unit prices set forth on the attached Schedule "I" of the Agreement, subject, however, to the provisions of paragraph (2) of Section 4.04. In the event any of said quantitative allowances are more than or less than the actual quantity of work performed, the Contract consideration shall be adjusted to reflect such variance, the amount of said adjustment to be determined in accordance with the provisions of Sections 4.02, 4.04 and 4.05A of the Agreement.

Section 4.05A Field Orders

When the Agreement contains a Field Order Allowance, the bid shall include the amount of such allowance. Said amount shall cover the cost of additional labor, materials and time for contingent activities within the scope of the Agreement as directed and described by the University in writing in a Field Order. The Field Order will include a description of the work and the method for determining the value of such work. The value of the work directed under this allowance will be determined by one or more of the provisions of Section 4.02. If the net cost(s) of all Field Orders issued are more or less than the specified amount of the allowance, the Contract sum will be adjusted by Change Order.

Section 4.06 Deductions for Unperformed and/or Uncorrected Work

(1) Without prejudice to any other rights, remedies or claims of the University, in the event that the Contractor at any time fails or neglects to supply working forces and materials of the proper quantity and quality necessary, in the opinion of the Consultant or the University, to comply with the approved time progress schedule, or fails in any respect to prosecute the work with promptness and diligence or causes by any action or omission the stoppage or delay of or interference with the work of any other contractor having a contract with the University, or fails in the performance of any obligations and responsibilities under this Agreement, then, and in that event, the University, acting itself or through the Consultant, may, upon three (3) working days' notice to the Contractor, either itself provide or have any other contractor, including but limited to the University's Job Order Contracting Program, provide any and all labor or materials or both necessary, in its opinion, to correct any aforesaid deficiency of the Contractor, and the University will thereafter backcharge the Contractor by issuing a Change Order reducing the amount of the Contract consideration for all costs and expenses it incurs in connection with the correction of such deficiency. The Contractor agrees that the University may deduct from any application for payment made by the Contractor, any and all Design Professional, Consultant and/or Construction Management fees and costs incurred by the University together with a markup upon such hard costs in the amount of 15% for services required in connection with the correction of such deficiency(ies).

(2) Notwithstanding any provisions in the Contract Documents to the contrary, if the University deems it inexpedient to correct work not done in accordance with the Contract or any work damaged as a result thereof, it shall notify

the Contractor of such fact and the latter shall not remedy or correct the same. In such event, however, the amount of the Contract consideration shall be decreased by an amount, determined by the University, which is equal to the difference in value of the work as performed by the Contractor and the value of the work had it been satisfactorily performed in accordance with the Contract or which is equal to the cost of performing the corrective work, whichever shall be the higher amount.

Section 4.07 Liquidated Damages

In the event that the Contractor shall fail to substantially complete all the work within the time fixed for such completion on page one of this agreement, or within the time to which such completion may have been extended or in the event that the Contractor abandons the work and the same is not substantially completed within the aforesaid time for such completion, the Contractor must pay to the University as damages for each calendar day of delay in completing the work the amount set forth on page one of the Contractors proposal, as stated on page one of this agreement. . In view of the difficulty of accurately ascertaining the loss which the University will suffer by reason of delay in completion of the work hereunder, said sum is hereby fixed and agreed as liquidated damages which the University will suffer by reason of such delay and not as a penalty. The University may deduct and retain out of the monies which may become due hereunder to the Contractor the amount of any such liquidated damages and, in case the amount which may become due to the Contractor under the provisions of the Contract may be less than the liquidated damages suffered by the University, the Contractor shall pay the difference, upon demand, to the University.

Section 4.08 Contract Breakdown

Prior to the submission of its first application for a progress payment, the Contractor shall present to the University and the Consultant for their approval a detailed schedule showing the breakdown of the Contract consideration. The Contract Breakdown Summary shall be further broken down as required by the Consultant and the University. Such schedule must contain the amount estimated for each part of the work and quantity survey for each part of the work. It shall also list the estimated value of the Contractor's guarantee obligations under the provisions of the Contract Documents, which is hereby fixed at $5,000 or one-half of one percent (1/2%) of the Contract award amount, whichever is the lesser sum. Such schedule shall be revised by the Contractor until the same shall be satisfactory to the University and the Consultant and shall not be changed after the University and the Consultant have approved the same. The amounts set forth in the schedule will not be considered as fixing the basis for additions to or deductions from the Contract consideration.

Section 4.09 Prompt Payment Requirements

(1) For the purposes of Article XI-A of the State Finance Law, the campus for which the work is being performed is the University's designated payment office. Applications for payment must contain the approval of the Consultant before being submitted to the University.

(2) Whenever the Consultant's approval of an application for payment is required under the Contract, the Consultant shall have fifteen (15) calendar days, after receipt of such application, to inspect the work before acting on the application.

(3) Until such time that the Contract is approved by the University, the thirty (30) day period, referred to in Article XI-A of the State Finance Law for the payment of invoices without interest, shall not begin.

Section 4.10 Progress Payments

(1) Unless otherwise provided in the Contract, progress payments will be made as the work progresses upon applications submitted by the Contractor and approved by the Consultant and the University. Payment of such approved applications shall be made by the University within thirty (30) days after such approval has been given.

(2) The University shall make progress payments to the Contractor on the basis of such approved applications, less a retained amount equal to 5 percent thereof (i.e. retainage) , plus an amount necessary, in the University's judgment, to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged, , together with any back charges and offsets which are deemed necessary or likely to be incurred by the University as a result of any failure by the Contractor to fully, completely, accurately and timely perform its work, which it shall reserve from each such payment until all of the work covered by the Contract has been completed.

(3) When the University and the Consultant have determined that all the work is substantially completed, or that a substantial portion of the permanent construction has been completed and accepted, the University shall make

a progress payment to the Contractor, on the basis of an application submitted by the Contractor and approved by the Consultant and the University, which shall reduce the unpaid amount due to the Contractor under the terms of the Contract, including all monies retained by the University from previous progress payments to the Contractor, to an amount equal to two (2) times the cost, estimated by the Consultant, of performing, in accordance with the Contract, all uncompleted, unaccepted and corrective work, plus an amount necessary, in the University's judgment, to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged. As the remaining items of work are satisfactorily completed or corrected, the University shall make progress payments to the Contractor, on the basis of applications submitted by the Contractor and approved by the University and the Consultant, covering said items of work less an amount necessary, in the University's judgment, to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged.

Section 4.11 Applications for Progress Payments

The Contractor shall prepare all applications for progress payments for work performed, together with supporting data and computations as are deemed necessary by the Consultant to determine the accuracy of the application. The application for payment and all required supporting documentation shall be submitted using the University's prescribed forms. The Contractor shall include with such applications reports detailing actual payments to minority and women-owned businesses who participate on University projects. Failure of the Contractor to submit applications for progress payments, or lack of complete and accurate supporting data, shall be sufficient reason for withholding payment until such omissions or errors are rectified. Unless otherwise directed, such applications, signed and certified as correct by the Contractor, shall be delivered by the Contractor to the Consultant once each month showing the total value of work completed and in place on the last day of the payment period covered by the application.

Section 4.12 Progress Payments for Materials Delivered to Site

(1) Progress payments made in accordance with Section 4.10 shall include a payment for materials and equipment to be furnished and installed under the Contract, after such materials and equipment have been delivered and accepted at the site of the work.

(2) Materials and equipment for which such progress payment has been made shall not be removed from the site, shall be stored until incorporated into the work in a location approved by the Consultant and shall be adequately protected from fire, theft and vandalism, the effects of the elements and any other damage whatsoever, and shall at all times be available for inspection by the Consultant and the University.

Section 4.13 Transfer of Title to Materials Delivered to Site

Title to all supplies and materials to be furnished or provided by the Contractor to the University pursuant to the provisions of the Contract Documents shall immediately vest in and become the sole property of the University upon delivery of such supplies and materials to the site. Notwithstanding such transfer of title, the Contractor shall have the full continuing responsibility to install such materials and supplies, protect them, maintain them in proper condition and forthwith repair, replace and make good any damage thereto without cost to the University until such time as the work covered by the Contract is fully accepted by the University. Such transfer of title shall in no way affect any of the Contractor's obligations under the Contract. In the event that, after title has passed to the University, any of such supplies and materials are rejected as being defective or otherwise unsatisfactory, title to all such supplies and materials shall be deemed to have been transferred back to the Contractor.

Section 4.14 Progress Payments for Materials Stored Off Site

(1) Progress payments made in accordance with Section 4.10 shall include a payment for materials and equipment which are in short and/or critical supply or have been specially fabricated for the Project. Materials and equipment, for which a progress payment is made pursuant to the preceding sentence, shall be stored by the Contractor, after fabrication, until such time as their delivery to the site is required, at a facility and location approved by the Consultant; shall be adequately protected from fire, theft and vandalism, the effects of the elements and any other damage whatsoever; and shall at all times be available for inspection by the Consultant and the University. No progress payment shall, however, be made for said materials and equipment until:

a. The Contractor furnishes to the University a bill of sale listing quantity and costs of said materials and equipment f.o.b. point of origin;

b. The Consultant shall have inspected said materials and equipment and recommended payment therefor; and

c. The Contractor furnishes to the University a builder's risk insurance policy, with the broad form extended coverage endorsement, for said materials and equipment, in an amount equal to 100 percent of the value thereof, which policy shall be maintained, at the sole cost and expense of the Contractor, until said materials and equipment have been incorporated into the Project. The said insurance policy shall contain a provision that the loss, if any, is to be made adjustable with and payable to the University as trustee for the insured, i.e., the University and the Contractor, and a provision that it shall not be changed or cancelled and that it will be automatically renewed upon expiration and continued in force unless the University is given thirty (30) days written notice to the contrary.

d. The Contractor shall develop and provide a preventive maintenance log for stored equipment when determined appropriate by the Consultant. The Contractor shall provide timely notification and opportunity for the Consultant and the University to view the Contractor's preventative maintenance efforts.

(2) Materials and equipment for which a progress payment has been made by the University pursuant to this Section shall be, become and remain the sole property of the University; provided, however, that the Contractor shall have the full continuing responsibility to install such materials and equipment, to deliver it to the site, to protect it, to maintain it in proper condition and to forthwith repair, replace and make good any damage thereto without cost and/or additional time to the University until such time as the work covered by the Contract is fully accepted by the University. Such transfer of title shall in no way affect any of the Contractor's obligations under the Contract.

Section 4.15 Withholding of Progress Payments

Notwithstanding anything contained in the Contract to the contrary, the University may withhold payment of all or any part of a progress, final or guarantee payment, in such an amount as it may deem proper to enforce the provisions of the Contract and to satisfy the claims of third parties, when:

a. The University shall learn of any claim, of whatsoever nature or kind, against the University or the Contractor, which in any way arises or is alleged to arise out of or as a result of or in connection with the performance by the Contractor of the work covered by the Contract or out of or in connection with the Contractor's operations or performance at or in the vicinity of the construction site, that, in the opinion of the University, may not be adequately covered by insurance.

   If an action on such claim is timely commenced and the liability of the University and/or the Contractor shall have been established therein by a final judgment of a court of competent jurisdiction, or if such claim shall have been admitted by the Contractor to be valid, the University shall pay such judgment or admitted claim out of the monies retained by it under the provisions of the Contract and return the balance, if any, without interest, to the Contractor.

   The University may withhold from the Contractor any payments retained by it until such time as all such claims are either satisfied or barred by law from being presented. At such time the University, upon written demand by the Contractor, shall return to the Contractor the amount so withheld, without interest.

b. The Contractor has not complied with any lawful or proper direction of the Consultant or the University or their representatives concerning the work covered by the Contract or the performance of the Contract or the production of records as required under the provisions of the Contract.

c. There exists any of the conditions, listed in Section 2.26, which would allow the University to declare the Contractor in default of the whole or any part of the work.

d. The Contractor is a foreign contractor and has not furnished satisfactory proof that all taxes due by such Contractor under the provisions of the Tax Law have been paid. The Certificate of the New York State Tax Commission to the effect that all such taxes have been paid shall be conclusive proof of the payment of such taxes. The term "foreign contractor" as used herein means, in the case of an individual, a person who is not a resident of the State of New York; in the case of a partnership, one having one or more partners not a resident of the State; and in the case of a corporation, one not organized under the laws of the State of New York.

e. The Contractor, upon request of the University at any time after the initial progress payment by the University to the Contractor, fails to furnish the University with such documentary evidence that the University may deem necessary to prove to it that material and labor paid for by the University under previous applications for payment submitted have been paid for by the Contractor and that there are no outstanding claims or liens in connection therewith or fails to satisfy the University that the Contractor, with good cause, has sufficiently provided for the payment and/or satisfaction of claims for said material and labor.

Section 4.16 Lien Law

The attention of the Contractor is specifically called to the provisions of the Lien Law of the State of New York, wherein funds received by a Contractor for a public improvement are declared to constitute trust funds in the hands of such Contractor to be applied first to the payment of certain claims.

Section 4.17 Substitution of Securities for Retainage

Any time after 50 percent of all the work has been completed, the University, if the progress and performance of the work is satisfactory to it, on request of the Contractor, will allow the Contractor to withdraw up to 50 percent of the aforesaid amount retained by the University by depositing with the Comptroller of the State of New York government securities, of the type and kind specified in Section 139 of the State Finance Law, having a market value not exceeding par, at the time of deposit, equal to the amount so withdrawn. The Comptroller of the State of New York shall, from time to time, collect all interest or income on the obligations so deposited, and shall pay the same, when and as collected, to the Contractor. If the deposit be in the form of coupon bonds, the coupons as they respectively become due shall be delivered to the Contractor; provided, however, that the Contractor shall not be entitled to interest or coupons or income on any of the deposited securities, the proceeds of which have or will be used or applied by the University. In the event that the Contractor does not, in accordance with the terms and provisions of the Contract, comply with and fulfill all of its obligations and responsibilities thereunder, the Comptroller of the State of New York shall have the right to sell, assign, transfer or otherwise dispose of the aforesaid securities and the University shall have the right to use and apply all or any part of the monies obtained by the Comptroller of the State of New York from such a sale, assignment, transfer or disposition or from the collection of interest or income from said securities to the performance and fulfillment of said obligations and responsibilities. Notwithstanding the foregoing, when the University makes a payment under Section 4.10 (3) of the Agreement, it will return to the Contractor, as part of such payment, its substituted securities, and thereafter all retention of the University shall be in funds and not in substituted securities.

Section 4.18 Final Payment

Upon acceptance of all the work, except for the Contractor's guarantee obligations under Section 2.25 of the agreement and the Contractor's guarantee obligations under any provision of the Specifications, the Contractor shall prepare and submit to the University and the Consultant, for their approval, a final application for payment, which the University, within thirty (30) days after its approval of same, shall pay. Such application and payment shall be in an amount equal to 100 percent of the Contract consideration excluding the Contractor's guarantee obligations, less:

a. All previous payments by the University to the Contractor;

b. All deductions authorized to be made by the University under the Contract; and

c. An amount necessary, in the University's judgment, to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged.

d. The Contractor shall not be entitled to any interest on the monies retained by the University pursuant to Subdivision c of Section 4.18 of the Agreement.

Section 4.19 Acceptance of Final Payment

(1) The acceptance by the Contractor, or by any one claiming by or through it, of the final payment shall, except with respect to the amount retained by the University pursuant to the provisions of subdivisions b and c of Section 4.18 of the Agreement, constitute and operate as a release to the University from any and all claims of any liability for anything theretofore done or furnished for or relating to or arising out of the work covered by the Contract and for any prior act, neglect or default on the part of the University or any of its trustees, officers, agents or employees in connection therewith.

(2) Should the Contractor refuse to accept the final payment as tendered by the University or should the Contractor refuse to execute the final application for payment without protest and without reserving any rights or claims

against the University, it shall constitute a waiver of any right to interest on the amount of the payment so tendered and/or on the amount set forth in said final application for payment.

Section 4.20 Guarantee Payment

(1) Subject to the provisions of the second paragraph of this Section, at the expiration of one (1) year after the University has accepted all the work covered by the Contract, the Contractor shall prepare and submit to the University and the Consultant, for their approval, a guarantee application for payment, which the University, within thirty (30) days after its approval of same, shall pay. Such application and payment shall be in an amount equal to the monies retained by the University for the Contractor's guarantee obligations under the Agreement, less any monies deducted by the University under this Section. The Contractor shall not be entitled to any interest on the monies retained by the University pursuant to subdivision c of Section 4.18 of the Agreement.

(2) In the event the Contractor does not, in accordance with the terms and provisions of the Contract, complete all corrective work or comply with and fulfill its contractual obligations, the University may use and apply all or any part of the monies retained by it to have such work or obligations performed or fulfilled by a person, firm or corporation other than the Contractor. The obligations of the Contractor, under the terms and provisions of the Contract, shall not, however, be limited to the monies retained by the University pursuant to the provisions of the Contract.

(3) No payments may be made under this agreement for work completed more than 365 days after the completion date **{insert completion date}** unless the date/duration listed on page one of this agreement, is extended in writing by the University.

Section 4.21 Acceptance of Guarantee Payment

The acceptance by the Contractor or by anyone claiming by or through it, of the guarantee payment shall constitute and operate as a release to the University from any and all claims in connection with monies retained by the University. Should the Contractor refuse to accept the guarantee payment as tendered by the University or should the Contractor refuse to execute the guarantee application for payment without protest and without reserving any rights or claims against the University, it shall constitute a waiver of any right to interest on the amount of the payment so tendered and/or on the amount set forth in said guarantee application for payment.

Section 4.22 Contractor Limited to Money Damages

Inasmuch as the Contractor can be compensated adequately by money damages for any breach of the Contract which may be committed by the University, the Contractor agrees that no default, act or omission of the University shall constitute a material breach of the Contract entitling it to cancel or rescind the same or to suspend or abandon performance thereof; and it hereby waives any and all rights and remedies to which it might otherwise be or become entitled to because of any wrongful act or omission of the University or its representatives, saving only its right to money damages.

Section 4.23 No Estoppel or Waiver

(1) The University shall not be precluded or estopped by any inspection, acceptance, application for payment or payment, final or otherwise, issued or made under the Contract or otherwise issued or made by it, the Consultant, or any trustee, officer, agent or employee of the University, from showing at any time the true amount and character of the work performed, or from showing that any such inspection, acceptance, application for payment or payment is incorrect or was improperly issued or made; and the University shall not be precluded or estopped, notwithstanding any such inspection, acceptance, application for payment or payment, from recovering from the Contractor any damages which it may sustain by reason of any failure on its part to comply strictly with the Contract and any monies which may be paid to it or for its account in excess of those to which it is lawfully entitled.

(2) Neither the acceptance of all or any part of the work covered by the Contract; nor any payment therefor; nor any order or application for payment issued under the Contract or otherwise issued by the University, the Consultant, or any trustee, officer, agent or employee of the University; nor any permission or direction to continue with the performance of the Contract before or after its specified completion date; nor any performance by the University of any of the Contractor's duties or obligations; nor any aid lent to the Contractor by the University in its performance of such duties or obligations; nor any delay or omission by the University to exercise any right or remedy accruing to it under the terms of the Contract or existing at law or in equity or by statute or otherwise;

nor any other thing done or omitted to be done by the University, its trustees, officers, agents or employees; shall be deemed to be a release to the Contractor or its sureties from any obligations, liabilities or undertakings in connection with the Contract or the Performance Bond or a waiver of any provision of the Contract or of any rights or remedies to which the University may be entitled because of any breach thereof, excepting only a written instrument expressly providing for such release or waiver. No cancellation, rescission or annulment hereof, in whole or as to any part of the Contract, because of any breach hereof, shall be deemed a waiver of any money damages to which the University may be entitled because of such breach. No waiver by the University of any breach of the Contract shall be deemed to be a waiver of any other or any subsequent breach.

Section 4.24 Limitation of Actions

(1) No action or proceeding shall be maintained by the Contractor, or anyone claiming under or through the Contractor, against the University, or its trustees, officers, agents or employees, upon any claim arising out of or based upon the Contract or any breach thereof or by reason of any act or omission or requirement of the University, or its trustees, officers, agents or employees, unless:

a. Such action or proceeding is instituted in the Supreme Court of the State of New York in and for the County of Albany;

b. The Contractor or the person claiming under or through it shall have strictly complied with all requirements relating to the giving of notices and information with respect to such claims; and shall have provided the University with an electronic version of any claims, including all required information and copies of all contractually required notices that the Contractor provided to the University and the Consultant throughout the duration of the Contract ;

c. Such action or proceeding by the Contractor shall be commenced within eighteen months after the date of substantial completion set by the University or its Consultant and issued in writing to the Contractor. Any action or proceeding not commenced within this time frame shall be dismissed with prejudice.

d. If the Contract is terminated or the Contractor declared in default by the University, such action is commenced within six (6) months after the date of such termination or declaration of default by the University.

e. All claims and disputes which are subject to or related to this Agreement and the Project shall be subject to non-binding mediation, at the sole option and discretion of the University. Should the University at its sole option and in the exercise of its sole discretion elect to mediate under this clause, then a letter from the University indicating the completion of such mediation shall be a condition precedent to any litigation by Contractor against the University or the State of New York. In the absence of the University exercising its right to proceed to mediation, the condition precedent to any litigation against the University of the State of New York, shall be a letter citing that the University declines its rights under this clause. The costs of any mediation shall be paid equally by the parties to the mediation.

(2) Notwithstanding anything in the laws of the State of New York to the contrary, the Contractor, or anyone claiming under or through the Contractor, shall not be entitled to any additional time to begin anew any other action if an action commenced within the times herein specified is dismissed or discontinued for any reason whatsoever.

Section 4.25 Electronic Payments

The Contractor shall provide complete and accurate payment applications in order to receive payment. Payment applications submitted must contain all information and supporting documentation required by the University. Payment for applications submitted by the Contractor shall only be rendered electronically unless payment by paper check is expressly authorized by the University's sole discretion, due to extenuating circumstances. Such electronic payment shall be made in accordance with ordinary State procedures and practices. The Contractor shall comply with the State Comptroller's procedures to authorize electronic payments. Authorization forms are available at the Office of the State Comptroller's website at www.osc.state.ny.us/epay/index.htm; by email at epunit@osc.state.ny.us; or by telephone at 518-474-4032. The Contractor acknowledges that it will not receive payment on any invoices submitted under this Agreement if it does not comply with the State Comptroller's electronic payment procedures, except where the University has expressly authorized payment by paper check as set forth above.

Article V

Protection of Rights and Property

Section 5.01 Accidents and Accident Prevention

The Contractor shall at all times take reasonable precautions for the safety of persons engaged in the performance of the work. The Contractor shall comply fully with all applicable provisions of the laws of the State of New York and OSHA and with all valid rules and regulations thereunder. The Contractor's attention is specifically called to the applicable rules and regulations, codes and bulletins of the New York State Department of Labor.

Section 5.02 Adjoining Property

The Contractor shall be required to protect all the adjoining property and to repair or replace any such properties damaged or destroyed by it, its employees or subcontractors through, by reason of or as a result of activities under, for or related to the Contract.

Section 5.03 Emergencies

(1) In case of an emergency which threatens loss or injury to persons or property, the Contractor will be allowed to act, without previous instructions from the Consultant or the University, in a diligent manner, to the extent required to avoid or limit such loss or injury, and it shall notify the Consultant and the University immediately thereafter of the action taken by it and of such emergency. Where the Contractor has not taken action but has notified the Consultant or the University of an emergency which threatens loss or injury to persons or property, it shall act in accordance with the instructions and/or authorization by the Consultant or the University.

(2) In the event that the Contractor performs extra work in accordance with the preceding paragraph, it will be compensated therefor in accordance with the provisions of Section 4.02.

Section 5.04 Fire Safety

(1) If the existing building is to be partially occupied during the course of the project, all existing exits except those shown for closure, fire walls, fire barriers and fire protection systems shall be continuously maintained in the occupied phases in compliance with the Fire Code of New York State and as required by NFPA 241 and as recommended in its Annex A, Explanatory Material, or other measures must be taken which in the opinion of the Consultant will provide equal safety. Those portions occupied by the campus must be available for their use 24 hours a day, seven days a week during the contract period unless otherwise scheduled in these documents. Comply with all applicable State and Federal codes and regulations. Prior to removal of existing fire walls, fire barriers and fire protection systems, if such removal is part of the work, install equivalent temporary fire walls, fire barriers and fire protection systems. The cost of all labor, fire watches, variances, materials, installations, maintenance and removal of such temporary fire protection systems or modifications to the existing systems are the responsibility of the Contractor. Install permanent fire walls, fire barriers and fire protection systems, if provided as part of the work, as soon as practical and as required by NFPA 241 and as recommended in its Annex A, Explanatory Material.

(2) Solid fuel salamanders and heaters shall not be used by the Contractor or any of its subcontractors. All other salamanders used by the Contractor or any of its subcontractors shall require constant attendance of competent persons on each floor where in use.

(3) All temporary fabric used by the Contractor or any of its subcontractors for curtains or awnings shall be either non-combustible or flame retarded so that it will not burn or propagate flame.

Section 5.05 Risks Assumed by Contractor

(1) To the fullest extent permitted by law, the Contractor solely assumes the following distinct several risks whether they arise from acts or omissions (whether negligent or not and whether supervisory or otherwise) of the Contractor, of the University, of third persons or from any other cause, including unforeseen obstacles and difficulties which may be encountered in the prosecution of the work covered by the Contract, whether such risks are within or beyond the control of the Contractor and whether such risks involve a legal duty, primary or otherwise, imposed upon the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York or the State University of New York, excepting only risks which arise from defects in maps, plans, designs or Specifications prepared, acquired or used by the Consultant or the University, from the negligence of the University, its agents or employees or from affirmative acts of the, State University Construction Fund, the Dormitory Authority of the State

of New York, the State of New York or the State University of New York or their trustees, officers, agents or employees committed with intent to cause the loss, damage and injuries herein below set forth:

a. The risk of loss or damage, direct or indirect, to the work covered by the Contract or to any plant, equipment, tools, materials or property furnished, used, installed or received by the University or by the Contractor or any subcontractor, material man or worker performing services or furnishing materials for the work covered hereunder. The Contractor shall bear such risk of loss or damage until the work covered by the Contract has been finally accepted by the University or until completion of removal of such plant, equipment, tools, materials or property from the construction site and the vicinity thereof, whichever event occurs last. In the event of such loss or damage, the Contractor shall forthwith repair, replace and/or make good any such loss or damage without cost to the University.

b. The risk of claims, just or unjust, by third persons against the Contractor, the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York, or the State University of New York on account of wrongful death, bodily injuries and property damage, direct or consequential, loss or damage of any kind whatsoever arising or alleged to arise out of or as a result of or in connection with the performance by the Contractor of the work covered by the Contract (whether actually caused by or resulting from the performance of the Contract) or out of or in connection with the Contractor's operations or presence at or in the vicinity of the construction site.

(2) To the fullest extent permitted by law, the Contractor shall indemnify and save harmless the State University Construction Fund the Dormitory Authority of the State of New York, the State of New York and the State University of New York, their trustees, officers, agents or employees against all claims described above and for all costs and expenses incurred by them in the defense, settlement or satisfaction thereof, including attorneys' fees and court costs. If so directed, the Contractor shall at its own expense defend against such claims, in which event it shall not, without obtaining express advance permission from Counsel of the University, raise any defense involving in any way jurisdiction of the tribunal over the University, governmental nature of the University or the provisions of any statutes respecting suits against the University.

(3) Neither the University's final acceptance of the work to be performed hereunder nor the making of any payment shall release the Contractor from its obligations under this Section. The enumeration elsewhere in the Contract of particular risks assumed by the Contractor or of particular claims for which it is responsible shall not be deemed to limit the effect of the provision of this Section or to imply that it assumes or is responsible for only risks or claims of the type enumerated.

Section 5.06 Compensation and Liability Insurance

(1) General Requirements

a. Prior to the commencement of the work to be performed by the Contractor, the Contractor shall procure at its sole cost and expense, and maintain in force at all times during this Agreement until Final Payment and as further required by the Contract, policies of insurance as herein set forth below. All insurance shall be written by insurance carriers approved by the University, licensed to do business in the State of New York ("admitted" carriers), and rated at least "A-" by A.M. Best Company.

b. Prior to the commencement of the work, the Contractor shall submit to the University, certificates of insurance, in a form acceptable to the University, showing evidence of compliance with all insurance requirements contained in this Agreement. Certificates of Insurance (with the exception of Workers' Compensation and Disability) must be provided on an ACORD 25 Certificate of Insurance, or an equivalent form. Certificates of Insurance shall disclose any deductible, self-insured retention, aggregate limit or any exclusion to the policy that materially changes the coverage required by the Contract; specify the additional insureds and named insureds as required herein; and be signed by an authorized representative of the insurance carrier or producer. Deductibles or self-insured retentions above $25,000 are subject to approval by the University and additional security may be required. Certificates shall reference the Contract number. Only original documents will be accepted.

c. All insurance shall provide that the required coverage apply on a primary and not on an excess or contributing basis as to any other insurance that may be available to the University for any claim arising from the Contractor's

work under this Agreement, or as a result of Contractor's activities. Any other insurance maintained by the University shall be in excess of and shall not contribute with the Contactor's insurance, regardless of the "other insurance" clause contained in the University's own policy of insurance. A copy of the endorsement reflecting this requirement may be requested by the University.

d. Not less than thirty days prior to the expiration date or renewal date, the Contractor shall supply the University with updated replacement certificates of insurance and endorsements. The Contractor shall advise the University of any letter or notification that cancels, materially changes, or non- renews the policy and Contractor shall require the insurance carrier(s) to copy the University on any letter or notification that cancels, materially changes, or non- renews the policy. If, at any time during the period of the Agreement, insurance as required is not in effect, or proof thereof is not provided to the University, the University shall have the options to (i) direct the Contractor to stop work with no additional cost or extension of time due on account thereof; or (ii) treat such failure as an event of default under Section 2.26 of the Agreement. At any time the coverage provisions and limits of the policies required herein do not meet the provisions and limits set forth in the Agreement the Contractor shall immediately cease Work on the Project. The Contractor shall not resume Work on the Project until authorized to do so by the University. Any delay or time lost as a result of the Contractor not having insurance required by the Agreement shall not give rise to a delay claim or any other claim against the University. If required by the University, Contractor shall deliver to the University within forty-five (45) days of such request, a copy of any or all policies of insurance not previously provided, certified by the insurance carrier as true and complete.

e. Should the Contractor engage a subcontractor, the Contractor shall impose the insurance requirements of this document on those entities, as applicable. Required insurance limits should be determined commensurate with the work of the subcontractor. Contractor shall keep the subcontractor certificates of insurance on file and produce them upon the demand of the University.

f. The aggregate insurance limits set forth herein shall apply separately to each contract for which a certificate of insurance and/or policy is issued.

g. Unless otherwise agreed to in writing by the University, policies must be endorsed to provide that there shall be no right of subrogation against the University. To the extent that any of the policies of insurance prohibit such a waiver of subrogation, Contractor shall secure the necessary permission to make this waiver.

h. Except as otherwise specifically provided herein or agreed in writing, policies must be written on an occurrence basis. The insurance policy(ies) shall name the State University Construction Fund, State University of New York, State of New York, its officers, agents, and employees as additional insureds thereunder. The additional insured requirement does not apply to Workers' Compensation or Disability coverage. Include ISO Endorsement CG 20 10 11 85 or its equivalent.

(2) Specific Coverage and Limits

The Contractor shall obtain and maintain in full force and effect, the following insurance with limits not less than those described below and as required by the terms of the Contract, or as required by law, whichever is greater:

a. Commercial General Liability Insurance. A Commercial General Liability insurance policy with coverage that shall include, but not be limited to coverage for bodily injury, property damage, personal/advertising injury, premises liability, independent contractors, blanket contractual liability including tort liability of another assumed in Contract, liability arising from all work and operations under this Agreement, defense and indemnification obligations, including those assumed under Contract, cross liability coverage for additional insureds, products/completed operations for a term no less than three years commencing upon acceptance of the work, explosion, collapse, and underground hazards, contractor means and methods, and liability resulting from Section 240 or Section 241 of the NYS Labor Law. The limits under such policy shall not be less than $2,000,000 each occurrence; $2,000,000 general aggregate; and products/completed operations with an aggregate limit of $2,000,000.

b. Workers Compensation and Disability Benefits as required by New York State.

c. Comprehensive Business Automobile Liability Insurance. A policy with a combined single limit for bodily injury and property damage of no less than $1,000,000 covering liability arising out of the use of any motor vehicle in connection with the work, including owned, leased, hired, and non-owned vehicles bearing, or, under the circumstances under which they are being used, required by the Motor Vehicle Laws of the State of New York to bear license plates. If the Contract involves the removal of hazardous waste from the project site or otherwise transporting hazardous materials, pollution liability coverage for covered autos shall be provided by form CA 99 48 03 06 or CA 00 12 03 06 and the Motor Carrier Act Endorsement (MCS90) shall be attached.

d. Umbrella and Excess Liability. When the limits of the Commercial General Liability, Auto, and/or Employers Liability policies procured are insufficient to meet the limits specified, the Contractor shall procure and maintain Commercial Umbrella and/or Excess Liability policies with limits in excess of the primary, provided, however, that the total amount of insurance coverage is at least equal to the requirements set forth above. Such policies shall follow the same form as the primary. Any insurance maintained by the University or additional insured shall be considered excess of and shall not contribute with any other insurance procured or maintained by the Contractor including primary, umbrella and excess liability regardless of the “other insurance” clause contained in either party’s policy.

e. Owner's Protective Liability Insurance. A policy issued to and covering the liability for damages imposed by law upon the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York and the State University of New York, their trustees, officers, agents or employees, with respect to all operations under the Contract by the Contractor and its subcontractors, and/or their interest in the Project and the property upon which work under the Contract is to be performed, including omissions and supervisory acts of the former. Said insurance policy limits shall be no less than $1,000,000 each occurrence and $2,000,000 general aggregate.

f. Asbestos Abatement Insurance. A liability insurance policy issued to and covering the liability, of the Contractor and/or subcontractor engaged in the removal, handling or wrapping of asbestos, if any of such work is to be performed under the Contract, for bodily injury, illness, sickness or property damage caused by exposure to asbestos in an amount not less than $1,000,000 per occurrence and $2,000,000 aggregate. The Contractor and/or its aforesaid subcontractor shall either obtain an endorsement to the aforesaid required insurance policy adding the State University Construction Fund, the Dormitory Authority of the State of New York, the State of New York and the State University of New York, their trustees, officers, agents or employees, as additional parties insured thereunder or shall obtain a separate owner's protective liability insurance policy for such parties with coverage similar to that required by the first sentence of this subdivision. In addition, any Contractor or subcontractor engaged in the removal, handling, or wrapping of asbestos shall, to the fullest extent permitted by law, hold harmless and indemnify the State University Construction Fund, the Dormitory Authority of the State of New York the State of New York and the State University of New York, their trustees, officers, agents or employees, for any claims or liabilities in connection with illness or sickness arising from work performed, not performed, or which should have been performed. The Contractor shall have said hold-harmless and indemnification conditions stipulated in all Contracts with subcontractors.

Section 5.07 Builder's Risk

(1) The Contractor shall procure and maintain, at its own cost and expense, until final acceptance of all work covered by this Agreement or until the Project has been turned over for use by the State University of New York, whichever event occurs earlier, a builder’s risk insurance policy covering all risks, with fire, extended coverage, vandalism and malicious mischief coverage. In the event the loss occurs at an occupied facility, the policy shall permit occupancy without the consent of the insurance company. The policy shall cover the cost of removing debris, including demolition as may be legally necessary by operation of any law, ordinance, or regulation, and property of the State held in their care, custody and/or control.

(2) The policy shall be in an amount equal to the Project’s insurable value, i.e., the Contract consideration less the cost of the Contractor's Performance and Labor and Material Bonds; the cost of trees, shrubbery, lawn grass, plants and the maintenance of the same; the cost of demolition; the cost of excavation; the cost of foundations, piers or other supports which are below the undersurface of the lowest basement floor, or where there is no basement, which are below the surface of the ground, concrete and masonry work; the cost of underground flues, pipes or wiring; the cost of earthmoving, grading and the cost of paving, roads, walks, parking lots or

athletic fields; and the cost of bridges, tunnels, dams, piers, wharves, docks, retaining walls and radio and/or television towers and antennas.

(3) The policy may contain a provision for a $500 deductible for each loss to a Project having an insurable value of less than $1,500,000 and a $1,000 deductible for each loss to a Project having an insurable value of $1,500,000 or more.

(4) The University, the Contractor and its subcontractors, as their interests may appear, shall be named as the parties insured under said policy.

(5) The Contractor shall have the sole responsibility to promptly report any loss to the insurer and/or its representatives and to furnish the latter with all necessary details relating to the occurrence of the loss and the amount thereof. The University, the Contractor and all subcontractors of the Contractor waive all rights, each against the others, for damages caused by fire or other perils covered by insurance provided under the terms of this Section, except such rights as they may have to the proceeds of insurance received; provided, however, this waiver shall not apply to any manufacturer, supplier or similar agent under any guarantee or warranty.

(6) The Contractor shall not violate or permit to be violated any condition of such policy and shall at all times satisfy the fire safety requirements of the University and the insurance company issuing the same.

(7) The procurement and maintenance of said policy shall in no way be construed or be deemed to relieve the Contractor from any of the obligations and risks imposed upon it by this Agreement or to be a limitation on the nature or extent of such obligations and risks.

(8) Not less than thirty days prior to the expiration date or renewal date, the Contractor shall supply the University with an updated replacement certificate of insurance and endorsements. The Contractor shall advise the University of any letter or notification that cancels, materially changes, or non- renews the policy and Contractor shall require the insurance carrier(s) to copy the University on any letter or notification that cancels, materially changes, or non- renews the policy. Before the Contractor shall be entitled to have any progress payment rendered on account of the work which is to be insured pursuant to this Section, it shall furnish to the University a certificate in duplicate of the insurance herein required. Such insurance must be procured from an insurance carrier approved by the University, licensed to do business in the State of New York (“admitted” carrier), and rated at least “A-” by A.M. Best Company.

Section 5.08 Effect of Procurement of Insurance
Neither the procurement nor the maintenance of such insurance shall in any way affect or limit the obligations, responsibilities or liabilities of the Contractor hereunder.

Section 5.09 No Third Party Rights
Nothing in this Section or in this Agreement shall create or give to third parties, except the Dormitory Authority of the State of New York, the State of New York and the State University Construction Fund any claim or right of action against the Contractor, the Consultant, the State University of New York, the State University Construction Fund, the Dormitory Authority of the State of New York, or the State of New York and beyond such as may legally exist irrespective of this Section or this Agreement.

Article VI
Minority and Women’s Business Enterprises (MWBEs) / Equal Employment Opportunity (EEO) Provisions

The University is required to implement the provisions of New York State Executive Law Article 15-A and 5 NYCRR Parts 142-145 (“MWBE Regulations”) for all State contracts as defined therein, with a value (1) in excess of $25,000 for labor, services, equipment, materials, or any combination of the foregoing or (2) in excess of $100,000 for real property renovations and construction.

The requirements for the MWBE and EEO programs are set forth in "Exhibit A-1" which is attached hereto and made a part hereof, and shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein and, in the event any such provision is not inserted or is not correctly inserted, then, upon the application of either party, this Agreement shall forthwith be physically amended to make such insertion or correction.

Article VII
Provisions Required by Law

Section 7.01 Provisions Deemed Inserted
Each and every provision required by law to be inserted in the Contract, including, but not limited to, the applicable provisions set forth in Exhibit "A" which is attached hereto and made a part hereof, shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein and, in the event any such provision is not inserted or is not correctly inserted, then, upon the application of either party, this Agreement shall forthwith be physically amended to make such insertion or correction.

Section 7.02 Wage Rates
The Contractor shall post the appropriate prevailing wage schedules in a conspicuous place at the construction site. The Department of Labor shall provide the Contractor with posters relating to prevailing wage rates and same shall be displayed by the Contractor in a conspicuous place at the construction site. The Contractor shall also distribute wallet cards, to be provided by the Department of Labor, to all workers engaged at the construction site containing information relating to wage rates and telephone numbers to call if a worker believes his or her rights are being violated. The Contractor shall provide each worker with a written notice, informing them of the applicable prevailing wage requirements, and the Contractor must obtain a signed statement or declaration from such worker attesting to the fact that he or she has been given this information. Further, the Contractor is required to keep certified copies of its payrolls at the construction site.

Article VIII
Vendor Responsibility

(1) The Contractor shall at all times during the Agreement term remain responsible. The Contractor shall provide the University with written notice as required by this Article of any issues impacting its responsibility, which shall minimally include updated responses to the it's filed vendor responsibility questionnaire. The Contractor agrees, if requested by the University, to present evidence of its continuing legal authority to do business in New York State, integrity, experience, ability, prior performance and organizational and financial capacity.

(2) The University, at its sole discretion, reserves the right to suspend any or all activities under this Agreement, at any time, when the University discovers information that calls into question the responsibility of the Contractor. In the event of such suspension, the Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, the Contractor must comply with the terms of the suspension order. Agreement activity may resume at such time as the University issues a written notice authorizing a resumption of performance under the Agreement.

(3) Upon written notice to the Contractor, and a reasonable opportunity to be heard with appropriate University officials or staff, the Contractor may be terminated by the University at the Contractor's expense where the Contractor is determined by the University to be non-responsible. In such event, the University may complete the contractual requirements in any manner that the University may deem advisable and pursue available legal or equitable remedies for breach.

In no case shall termination of the Contract by the University be deemed a breach by the University thereof, nor shall the University be liable for any damages or lost profits or otherwise, which may be sustained by Contractor as a result of such termination.

Article IX
Use of Service-Disabled Veteran-Owned Business Enterprises in Contract Performance

Article 17-B of New York State Executive Law acknowledges that Service-Disabled Veteran-Owned Businesses (SDVOBs) strongly contribute to the economies of the State and the nation. As defenders of our nation and in recognition of their economic activity in doing business in New York State, the Contractor for the Project and Work defined in this Agreement, agrees to, at no additional cost to the University, fully comply and cooperate with the University's

implementation of New York State Executive Law Article 17-B and provide opportunities for SDVOBs in the fulfillment of the requirements of this Agreement. SDVOBs can be readily identified on the directory of certified businesses at: http://www.ogs.ny.gov/Core/docs/CertifiedNYS_SDVOB.pdf.

In accordance with the Memorandum of Understanding (MOU) dated as of August 15, 2019 by and between the Governor, the Office of State Comptroller (State Comptroller), the University and other entities, certain University contracts (Covered Contracts) are subject to review by the State Comptroller.

As such a Covered Contract, the State shall have no liability under this Agreement and this Agreement is not valid, effective or binding until it has been approved by the State Comptroller and filed in his or her office; provided however that if the State Comptroller does not approve or reject this Agreement within the time period specified in the MOU, then this Agreement shall be valid and enforceable without such approval.

This Agreement may be amended only upon the mutual written consent of the Parties, and with the approval of the New York Attorney General and the Office of the State Comptroller if such approval is required.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

Agency Certification:
In addition to the acceptance of this contract, I also certify that original copies of this signature page will be attached to all other exact copies of this contract.

Contract Number: *Insert Contract Number*

Insert Contractor Name	**STATE UNIVERSITY OF NEW YORK**
Sign:_____ Date:_____	Sign:_____ Date:_____
Print: _____	Print: _____
Title:_____	Title:_____
APPROVED BY ATTORNEY GENERAL:	**APPROVED BY OFFICE OF THE STATE COMPTROLLER:**
_____ Date:_____	_____ Date:_____
By:	By:

If Corporation, affix Corporate Seal

ACKNOWLEDGMENTS

(ACKNOWLEDGMENT BY AN INDIVIDUAL)

STATE OF NEW YORK)
) ss.
COUNTY OF)

On this _____ day of _____, 20_____, before me personally came _____, to me known and known to me to be the person(s) described in and who executed the foregoing instrument and he/she acknowledged to me that he/she executed the same.

_____Notary Public

(ACKNOWLEDGMENT BY A PARTNERSHIP)

STATE OF NEW YORK)
) ss.
COUNTY OF)

On this _____ day of _____, 20_____, before me personally came_____

_____, to me known and known to me to be the person who executed the above instrument, who, being duly sworn by me, did for themselves depose and say that they are a member of the firm of _____, consisting of themselves and _____, that he/she executed the foregoing instrument in the firm name _____, and that he/she had authority to sign the same, and that he/she did duly acknowledge to me that he/she executed the same as the act and deed of the aforementioned firm for the purposes mentioned therein.

_____Notary Public

(ACKNOWLEDGMENT BY A CORPORATION)

STATE OF)
) ss.
COUNTY OF)

On this _____ day of_____, 20_____, before me personally came_____ , to me known, who, being duly sworn, did depose and say that he/she reside in _____; that he/she is the _____of the _____, the corporation described in and which executed the above instrument; and that he/she/they signed his/her/their name(s) thereto by authority of the board of directors of said corporation.

_____
Notary Public

Schedule I, II, III

SCHEDULE I
Unit Prices

Refer to Section 4.04 of the Agreement for additional information.

Work or Material Description	Amount in Words	Amount in Figures
None		

SCHEDULE II Allowance(s)

Refer to Section 4.05 of the Agreement for additional information. The amount(s) indicated below shall be included in the Total Bid amount and their total indicated on the Proposal in the space provided.

Work or Material Description	Amount in Words	Amount in Figures
None		

SCHEDULE III Field Order Allowance

Refer to Section 4.05A of the Agreement for additional information. The amount indicated below shall be included in the Total Bid amount and indicated on the Proposal in the space provided

Twenty-five thousand three hundred forty dollars	$25,340.00
(in words)	(in figures

Exhibit A

Exhibit A-1

Standard Contract Clauses

State University of New York

EXHIBIT A

March 16, 2020

The parties to the attached contract, license, lease, amendment or other agreement of any kind (hereinafter, "contract") agree to be bound by the following clauses which are hereby made a part of the contract (the word "Contractor" herein refers to any party other than the State or State University of New York, whether a Contractor, licensor, licensee, lessor, lessee or any other party; the State University of New York shall hereinafter be referred to as "SUNY"):

1. **EXECUTORY CLAUSE.** In accordance with Section 41 of the State Finance Law, the State shall have no liability under this contract to the Contractor or to anyone else beyond funds appropriated and available for this contract.

2. **PROHIBITION AGAINST ASSIGNMENT**. In accordance with Section 138 of the State Finance Law, this contract may not be assigned by the Contractor or its right, title or interest therein assigned, transferred, conveyed, sublet or otherwise disposed of without the State's previous written consent, and attempts to do so are null and void. Notwithstanding the foregoing, such prior written consent of an assignment of a contract let pursuant to Article XI of the State Finance Law may be waived at the discretion of SUNY and with the concurrence of the State Comptroller where the original contract was subject to the State Comptroller's approval, where the assignment is due to a reorganization, merger or consolidation of the Contractor's business entity or enterprise. SUNY retains its right to approve an assignment and to require that any Contractor demonstrate its responsibility to do business with SUNY. The Contractor may, however, assign its right to receive payments without SUNY's prior written consent unless this contract concerns Certificates of Participation pursuant to Article 5-A of the State Finance Law.

3. **COMPTROLLER'S APPROVAL.** In accordance with Section 112 of the State Finance Law and Section 355 of the Education Law, if this contract exceeds $250,000, or, if this is an amendment for any amount to a contract which, as so amended, exceeds said statutory amount, or if, by this contract, the State agrees to give something other than money when the value or reasonably estimated value of such consideration exceeds $25,000, it shall not be valid, effective or binding upon the State, and the State shall bear no liability, until it has been approved by the State Comptroller and filed in his or her office, or the pertinent pre-audit review period has elapsed. However, such pre-approval shall not be required for any contract established as a centralized contract through the Office of General Services or for a purchase order or other transaction issued under such centralized contract.

4. **WORKERS' COMPENSATION BENEFITS.** In accordance with Section 142 of the State Finance Law, this contract shall be void and of no force and effect unless the Contractor shall provide and maintain coverage during the life of this contract for the benefit of such employees as are required to be covered by the provisions of the Workers' Compensation Law.

5. **NON-DISCRIMINATION REQUIREMENTS.** To the extent required by Article 15 of the Executive Law (also known as the Human Rights Law) and all other State and Federal statutory and constitutional non-discrimination provisions, the Contractor will not discriminate against any employee or applicant for employment, nor subject any individual to harassment, because of age, race, creed, color, national origin, sexual orientation, gender identity or expression, military status, sex, disability, predisposing genetic characteristics, familial status, marital status, or domestic violence victim status or because the individual has opposed any practices forbidden under the Human Rights Law or has filed a complaint, testified, or assisted in any proceeding under the Human Rights Law. Furthermore, in accordance with Section 220-e of the Labor Law, if this is a contract for the construction, alteration or repair of any public building or public work or for the manufacture, sale or distribution of materials, equipment or supplies, and to the extent that this contract shall be performed within the State of New York, Contractor agrees that neither it nor its subcontractors shall, by reason of race, creed, color, disability, sex, or national origin: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. If this is a building service contract as defined in Section 230 of the Labor Law, then, in accordance with Section 239 thereof, Contractor agrees that neither it nor its subcontractors shall by reason of race, creed, color, national origin, age, sex or disability: (a) discriminate in hiring against any New York State citizen who is qualified and available to perform the work; or (b) discriminate against or intimidate any employee hired for the performance of work under this contract. Contractor is subject to fines of $50.00 per person per day for any violation of Section 220-e or Section 239 as well as possible termination of this contract and forfeiture of all moneys due hereunder for a second or subsequent violation

6. **WAGE AND HOURS PROVISIONS.** If this is a public work contract covered by Article 8 of the Labor Law or a building service contract covered by Article 9 thereof, neither Contractor's employees nor the employees of its subcontractors may be required or permitted to work more than the number of hours or days stated in said statutes, except as otherwise provided in the Labor Law and as set forth in prevailing wage and supplement schedules issued by the State Labor Department. Furthermore, Contractor and its subcontractors must pay at least the prevailing wage rate and pay or provide the prevailing supplements, including the premium rates for overtime pay, as determined by the State Labor Department in accordance with the Labor Law. Additionally, effective April 28, 2008, if this is a public work contract covered by Article 8 of the Labor Law, the Contractor understands and agrees that the filing of payrolls in a manner consistent with Subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to payment by the State of any State- -approved sums due and owing for work done upon the project.

7. **NON-COLLUSIVE BIDDING CERTIFICATION.** In accordance with Section 139-d of the State Finance Law, if this contract was awarded based upon the submission of competitive bids, Contractor affirms, under penalty of perjury, that its bid was arrived at independently and without collusion aimed at restricting competition. Contractor further affirms that, at the time Contractor submitted its bid, an authorized and responsible person executed and delivered to SUNY a non-collusive bidding certification on Contractor's behalf.

8. **INTERNATIONAL BOYCOTT PROHIBITION.** In accordance with Section 220-f of the Labor Law and Section 139-h of the State Finance Law, if this contract exceeds $5,000, the Contractor agrees, as a material condition of the contract, that neither the Contractor nor any substantially owned or affiliated person, firm, partnership or corporation has participated, is participating, or shall participate in an international boycott in violation of the federal Export Administration Act of 1979 (50 USC App. Sections 2401 *et seq*.) or regulations thereunder. If such Contractor, or any of the aforesaid affiliates of Contractor, is convicted or is otherwise found to have violated said laws or regulations upon the final determination of the United States Commerce Department or any other appropriate agency of the United States subsequent to the contract's execution, such contract, amendment or modification thereto shall be rendered forfeit and void. The Contractor shall so notify the State Comptroller within five (5) business days of such conviction, determination or disposition of appeal (2 NYCRR § 105.4).

9. **SET-OFF RIGHTS.** The State shall have all of its common law, equitable and statutory rights of set-off. These rights shall include, but not be limited to, the State 's option to withhold for the purposes of set-off any moneys due to the Contractor under this contract up to any amounts due and owing to the State with regard to this contract, any other contract with any State department or agency, including any contract for a term commencing prior to the term of this contract, plus any amounts due and owing to the State for any other reason including, without limitation, tax delinquencies, fee delinquencies or monetary penalties relative thereto. The State shall exercise its set-off rights in accordance with normal State practices including, in cases of set-off pursuant to an audit, the finalization of such audit by SUNY, its representatives, or the State Comptroller.

10. **RECORDS.** The Contractor shall establish and maintain complete and accurate books, records, documents, accounts and other evidence directly pertinent to performance under this contract (hereinafter, collectively, "the Records"). The Records must be kept for the balance of the calendar year in which they were made and for six (6) additional years thereafter. The State Comptroller, the Attorney General and any other person or entity authorized to conduct an examination, as well as SUNY and any other agencies involved in this contract, shall have access to the Records during normal business hours at an office of the Contractor within the State of New York or, if no such office is available, at a mutually agreeable and reasonable venue within the State, for the term specified above for the purposes of inspection, auditing and copying. SUNY shall take reasonable steps to protect from public disclosure any of the Records which are exempt from disclosure under Section 87 of the Public Officers Law (the "Statute") provided that: (i) the Contractor shall timely inform an appropriate SUNY official, in writing, that said Records should not be disclosed; and (ii) said Records shall be sufficiently identified; and (iii) designation of said Records as exempt under the Statute is reasonable. Nothing contained herein shall diminish, or in any way adversely affect, SUNY's or the State's right to discovery in any pending or future litigation.

11. **IDENTIFYING INFORMATION AND PRIVACY NOTIFICATION.**

(a) Identification Number(s). Every invoice or New York State Claim for Payment submitted to SUNY by a payee, for payment for the sale of goods or services or for transactions (e.g., leases, easements, licenses, etc.) related to real or personal property must include the payee's identification number. The number is any or all of the following: (i) the payee's Federal employer identification number, (ii) the payee's Federal social security number, and/or (iii) the payee's Vendor Identification Number assigned by the Statewide Financial System. Failure to include such number or numbers may delay payment. Where the payee does not have such number or numbers, the payee, on its invoice or Claim for Payment, must give the reason or reasons why the payee does not have such number or numbers.

(b) Privacy Notification. (1) The authority to request the above personal information from a seller of goods or services or a lessor of real or personal property, and the authority to maintain such information, is found in Section 5 of the State Tax Law. Disclosure of this information by the seller or lessor to SUNY or the State is mandatory. The principal purpose for which the information is collected is to enable the State to identify individuals, businesses and others who have been delinquent in filing tax returns or may have understated their tax liabilities and to generally identify persons affected by the taxes administered by the Commissioner of Taxation and Finance. The information will be used for tax administration purposes and for any other purpose authorized by law. (2) The personal information is requested by the purchasing unit of SUNY contracting to purchase the goods or services or lease the real or personal property covered by this contract or lease. The information is maintained in the Statewide Financial System by the Vendor Management Unit within the Bureau of State Expenditures, Office of the State Comptroller, 110 State Street,

Albany, New York 12236.

12. **EQUAL EMPLOYMENT OPPORTUNITIES FOR MINORITIES AND WOMEN.** In accordance with Section 312 of the Executive Law and 5 NYCRR Part 143, if this contract is: (i) a written agreement or purchase order instrument, providing for a total expenditure in excess of $25,000.00, whereby a contracting agency is committed to expend or does expend funds in return for labor, services, supplies, equipment, materials or any combination of the foregoing, to be performed for, or rendered or furnished to the contracting agency; or (ii) a written agreement in excess of $100,000.00 whereby a contracting agency is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; or (iii) a written agreement in excess of $100,000.00 whereby the owner of a State assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project, then the following shall apply and by signing this agreement the Contractor certifies and affirms that it is Contractor's equal employment opportunity policy that:

(a) The Contractor will not discriminate against employees or applicants for employment because of race, creed, color, national origin, sex, age, disability or marital status, shall make and document its conscientious and active efforts to employ and utilize minority group members and women its workforce on State contracts and will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. Affirmative action shall mean recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation;

(b) at SUNY's request, Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union or representative will not discriminate on the basis of race, creed, color, national origin, sex, age, disability or marital status and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein; and

(c) the Contractor shall state, in all solicitations or advertisements for employees, that, in the performance of the State contract, all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color, national origin, sex, age, disability or marital status.

Contractor will include the provisions of "a," "b," and "c" above, in every subcontract over $25,000.00 for the construction, demolition, replacement, major repair, renovation, planning or design of real property and improvements thereon (the "Work") except where the Work is for the beneficial use of the Contractor. Section 312 does not apply to: (i) work, goods or services unrelated to this contract; or (ii) employment outside New York State. The State shall consider compliance by a contractor or sub-contractor with the requirements of any federal law concerning equal employment opportunity which effectuates the purpose of this clause. SUNY shall determine whether the imposition of the requirements of the provisions hereof duplicate or conflict with any such federal law and if such duplication or conflict exists, SUNY shall waive the applicability of Section 312 to the extent of such duplication or conflict. Contractor will comply with all duly promulgated and lawful rules and regulations of the Department of Economic Development's Division of Minority and Women's Business Development pertaining hereto.

13. **CONFLICTING TERMS.** In the event of a conflict between the terms of the contract (including any and all attachments thereto and amendments thereof) and the terms of this Exhibit A, the terms of this Exhibit A shall control.

14. **GOVERNING LAW.** This contract shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise.

15. **LATE PAYMENT.** Timeliness of payment and any interest to be paid to Contractor for late payment shall be governed by Article 11-A of the State Finance Law to the extent required by law.

16. **NO ARBITRATION.** Disputes involving this contract, including the breach or alleged breach thereof, may not be submitted to binding arbitration (except where statutorily authorized) but must, instead, be heard in a court of competent jurisdiction of the State of New York.

17. **SERVICE OF PROCESS.** In addition to the methods of service allowed by the State Civil Practice Law & Rules ("CPLR"), Contractor hereby consents to service of process upon it by registered or certified mail, return receipt requested. Service hereunder shall be complete upon Contractor's actual receipt of process or upon the State's receipt of the return thereof by the United States Postal Service as refused or undeliverable. Contractor must promptly notify the State, in writing, of each and every change of address to which service of process can be made. Service by the State to the last known address shall be sufficient. Contractor will have thirty (30) calendar days after service hereunder is complete in which to respond.

18. **PROHIBITION ON PURCHASE OF TROPICAL HARDWOODS.** The Contractor certifies and warrants that all wood products to be used under this contract award will be in accordance with, but not limited to, the specifications and provisions of State Finance Law §165 (Use of Tropical Hardwoods), which prohibits purchase and use of tropical hardwoods, unless specifically exempted, by the State or any governmental agency or political subdivision or public benefit corporation. Qualification for an exemption under this law will be the responsibility of the contractor to establish to meet with the approval of the State.

In addition, when any portion of this contract involving the use of woods, whether supply or installation, is to be performed by any subcontractor, the prime Contractor will indicate and certify in the submitted bid proposal that the subcontractor has been informed and is in compliance with specifications and provisions regarding use of tropical hardwoods as detailed in Section 165 of the State Finance Law. Any such use must meet with the approval of the State, otherwise, the bid may not be considered responsive. Under bidder certifications, proof of qualification for exemption will be the responsibility of the Contractor to meet with the approval of the State.

19. **MACBRIDE FAIR EMPLOYMENT PRINCIPLES.** In accordance with the MacBride Fair Employment Principles (Chapter 807 of the Laws of 1992) , the Contractor hereby stipulates that the Contractor either (a) has no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations in Northern Ireland in accordance with the MacBride Fair Employment Principles (as described in Section 165of the New York State Finance Law), and shall permit independent monitoring of compliance with such principles.

20. **OMNIBUS PROCUREMENT ACT OF 1992.**
It is the policy of New York State to maximize opportunities for the participation of New York State business enterprises, including minority and women-owned business enterprises as bidders, subcontractors and suppliers on its procurement contracts.

Information on the availability of New York State subcontractors and suppliers is available from:

NYS Department of Economic Development
Division for Small Business

Albany, NY 12245
Tel: 518-292-5100
Fax: 518-292-5884
email: opa@esd.ny.gov

A directory of certified minority and women-owned business enterprises is available from:

NYS Department of Economic Development
Division of Minority and Women's Business Development
633 Third Avenue
New York, NY 10017
212-803-2414

email: mwbecertification@esd.ny.gov
https://ny.newnycontracts.com/FrontEnd/VendorSearchPublic.asp

The Omnibus Procurement Act of 1992 (Chapter 844 of the Laws of 1992, codified in State Finance Law § 139-i and Public Authorities Law § 2879(3)(n)–(p)) requires that by signing this bid proposal or contract, as applicable, Contractors certify that whenever the total bid amount is greater than $1 million:

(a) The Contractor has made reasonable efforts to encourage the participation of New York State Business Enterprises as suppliers and subcontractors, including certified minority and women-owned business enterprises, on this project, and has retained the documentation of these efforts to be provided upon request to SUNY;

(b) The Contractor has complied with the Federal Equal Employment Opportunity Act of 1972 (P.L. 92-261), as amended;

(c) The Contractor agrees to make reasonable efforts to provide notification to New York State residents of employment opportunities on this project through listing any such positions with the Job Service Division of the New York State Department of Labor, or providing such notification in such manner as is consistent with existing collective bargaining contracts or agreements. The Contractor agrees to document these efforts and to provide said documentation to the State upon request; and

(d) The Contractor acknowledges notice that the State may seek to obtain offset credits from foreign countries as a result of this contract and agrees to cooperate with the State in these efforts.

21. **RECIPROCITY AND SANCTIONS PROVISIONS.** Bidders are hereby notified that if their principal place of business is located in a country, nation, province, state or political subdivision that penalizes New York State vendors, and if the goods or services they offer will be substantially produced or performed outside New York State, the Omnibus Procurement Act of 1994 and 2000 amendments (Chapter 684 and Chapter 383, respectively, codified in State Finance Law § 165(6) and Public Authorities Law § 2879(5)) require that they be denied contracts which they would otherwise obtain.
NOTE: As of October 2019, the list of discriminatory jurisdictions subject to this provision includes the states of South Carolina, Alaska, West Virginia, Wyoming, Louisiana and Hawaii.

22. **COMPLIANCE WITH BREACH NOTIFICATION AND DATA SECURITY LAWS.** Contractor shall comply with the provisions of the New York State Information Security Breach and Notification Act (General Business Law § 899-aa; State Technology Law § 208) and commencing March 21, 2020 shall also comply with General Business Law § 899-bb.

23. **COMPLIANCE WITH CONSULTANT DISCLOSURE LAW.** If this is a contract for consulting services, defined for purposes of this requirement to include analysis, evaluation, research, training, data processing, computer programming, engineering, environmental health and mental health services, accounting, auditing, paralegal, legal or similar services, then in accordance with Section 163(4)(g) of the State Finance Law (as amended by Chapter 10 of the Laws of 2006), the Contractor shall timely, accurately and properly comply with the requirement to submit an annual employment report for the contract to SUNY, the Department of Civil Service and the State Comptroller.

24**. PURCHASES OF APPAREL AND SPORTS EQUIPMENT**. In accordance with State Finance Law Section 165(7), SUNY may determine that a bidder on a contract for the purchase of apparel or sports equipment is not a responsible bidder as defined in State Finance Law Section 163 based on (a) the labor standards applicable to the manufacture of the apparel or sports equipment, including employee compensation, working conditions, employee rights to form unions and the use of child labor; or (b) bidder's failure to provide information sufficient for SUNY to determine the labor conditions applicable to the manufacture of the apparel or sports equipment.

25. **PROCUREMENT LOBBYING**. To the extent this contract is a "procurement contract" as defined by State Finance Law §§ 139-j and 139-k, by signing this contract the Contractor certifies and affirms that all disclosures made in accordance with State Finance Law §§ 139-j and 139-k are complete, true and accurate. In the event such certification is found to be intentionally false or intentionally incomplete, the State may terminate the contract by providing written notification to the Contractor in accordance with the terms of the contract.

26. **CERTIFICATION OF REGISTRATION TO COLLECT SALES AND COMPENSATING USE TAX BY CERTAIN STATE CONTRACTORS, AFFILIATES AND SUBCONTRACTORS**. To the extent this contract is a contract as defined by Tax Law § 5-a, if the Contractor fails to make the certification required by Tax Law § 5-a or if during the term of the contract, the Department of Taxation and Finance or SUNY discovers that the certification, made under penalty of perjury, is false, then such failure to file or false certification shall be a material breach of this contract and this contract may be terminated, by providing written notification to the Contractor in accordance with the terms of the contract, if SUNY determines that such action is in the best interests of the State.

27. **IRAN DIVESTMENT ACT**. By entering into this contract, Contractor certifies in accordance with State Finance Law §165-a that it is not on the "Entities Determined to be Non-Responsive Bidders/Offerers pursuant to the New York State Iran Divestment Act of 2012" ("Prohibited Entities List") posted at:

https://ogs.ny.gov/list-entities-determined -be-non-responsive-biddersofferers-pursuant-nys-iran-divestment-act-2012

Contractor further certifies that it will not utilize on this contract any subcontractor that is identified on the Prohibited Entities List. Contractor agrees that should it seek to renew or extend this contract, it must provide the same certification at the time the contract is renewed or extended. Contractor also agrees that any proposed Assignee of this contract will be required to certify that it is not on the Prohibited Entities List before the contract assignment will be approved by the State.

During the term of the contract, should SUNY receive information that a person (as defined in State Finance Law §165-a) is in violation of the above-referenced certifications, SUNY will review such information and offer the person an opportunity to respond. If the person fails to demonstrate that it has ceased its engagement in the investment activity which is in violation of the Act within 90 days after the determination of such violation, then SUNY shall take such action as may be appropriate and provided for by law, rule, or contract, including, but not limited to, imposing sanctions, seeking compliance, recovering damages, or declaring the Contractor in default.

SUNY reserves the right to reject any bid, request for assignment, renewal or extension for an entity that appears on the Prohibited Entities List prior to the award, assignment, renewal or extension of a contract, and to pursue a responsibility review with respect to any entity that is awarded a contract and appears on the Prohibited Entities list after contract award.

28**. ADMISSIBILITY OF REPRODUCTION OF CONTRACT**. Notwithstanding the best evidence rule or any other legal principle or rule of evidence to the contrary, the Contractor acknowledges and agrees that it waives any and all objections to the admissibility into evidence at any court proceeding or to the use at any examination before trial of an electronic reproduction of this contract, in the form approved by the State Comptroller, if such approval was required, regardless of whether the original of said contract is in existence.

THE FOLLOWING PROVISIONS SHALL APPLY ONLY TO THOSE CONTRACTS TO WHICH A HOSPITAL OR OTHER HEALTH SERVICE FACILITY IS A PARTY

29. Notwithstanding any other provision in this contract, the hospital or other health service facility remains responsible for insuring that any service provided pursuant to this contract complies with all pertinent provisions of Federal, state and local statutes, rules and regulations. In the foregoing sentence, the word "service" shall be construed to refer to the health care service rendered by the hospital or other health service facility.

30. (a) In accordance with the 1980 Omnibus Reconciliation Act (Public Law 96-499), Contractor hereby agrees that until the expiration of four years after the furnishing of services under this agreement, Contractor shall make available upon written request to the Secretary of Health and Human Services, or upon request, to the Comptroller General of the United States or any of their duly authorized representatives, copies of this contract, books, documents and records of the Contractor that are necessary to certify the nature and extent of the costs hereunder.

(b) If Contractor carries out any of the duties of the contract hereunder, through a subcontract having a value or cost of $10,000 or more over a twelve-month period, such subcontract shall contain a clause to the effect that, until the expiration of four years after the furnishing of such services pursuant to such subcontract, the subcontractor shall make available upon written request to the Secretary of Health and Human Services or upon request to the Comptroller General of the United States, or any of their duly authorized representatives, copies of the subcontract and books, documents and records of the subcontractor that are necessary to verify the nature and extent of the costs of such subcontract.

(c) The provisions of this section shall apply only to such contracts as are within the definition established by the Health Care Financing Administration, as may be amended or modified from time to time.

31. Hospital Retained Authority: Hospital Retained Authority: The Hospital retains direct, independent authority over the appointment and/or dismissal, in its sole discretion, of the facility's management level employees (including but not limited to, the Facility/Service Administrator/Director, the Medical Director, the Director of Nursing, the Chief Executive Officer, the Chief Financial Officer and the Chief Operating Officer) and all licensed or certified health care staff. The Hospital retains the right to adopt and approve, at its sole discretion, the facility's operating and capital budgets. The Hospital retains independent control over and physical possession of the facility's books and records. The Hospital retains independent control over and physical possession of the facility's operating policies and procedures. The Hospital retains full authority and responsibility for, and control over, the operations and management of the facility. The Hospital retains the right and authority to independently adopt, approve and enforce, in its sole discretion, policies affecting the facility's delivery of health care services. The Hospital retains the right to independently adopt, approve and enforce, at its sole discretion, the disposition of assets and authority to incur debts. The Hospital retains the right to approve, at its sole discretion, contracts for administrative services,

management and/or clinical services. The Hospital retains the right to approve, at its sole discretion, any facility debt. The Hospital retains the right to approve, at its sole discretion, settlements of administrative proceeding or litigation to which the facility is a party. No powers specifically reserved to the Hospital may be delegated to, or shared by, the Contractor or any other person. In addition, if there is any disagreement between the parties to this Agreement regarding control between the Hospital and the Contractor, the terms of this Section shall control.

1. DEFINITIONS. The following terms shall be defined in accordance with Section 310 of the Executive Law:

STATE CONTRACT herein referred to as "State Contract", shall mean: (a) a written agreement or purchase order instrument, providing for a total expenditure in excess of twenty-five thousand dollars ($25,000.00), whereby the State University of New York ("University") is committed to expend or does expend funds in return for labor, services including but not limited to legal, financial and other professional services, supplies, equipment, materials or a combination of the foregoing, to be performed for, or rendered or furnished to the University; (b) a written agreement in excess of one hundred thousand dollars ($100,000.00) whereby the University is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon; (c) and (d) a written agreement in excess of one hundred thousand dollars ($100,000.00) whereby the University as an owner of a state assisted housing project is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon for such project.

SUBCONTRACT herein referred to as "Subcontract", shall mean any agreement for a total expenditure in excess of $25,000 providing for services, including non-staffing expenditures, supplies or materials of any kind between a State agency and a prime contractor, in which a portion of the prime contractor's obligation under the State contract is undertaken or assumed by a business enterprise not controlled by the prime contractor.

WOMEN-OWNED BUSINESS ENTERPRISE herein referred to as "WBE", shall mean a business enterprise, including a sole proprietorship, partnership or corporation that is: (a) at least fifty-one percent (51%) owned by one or more United States citizens or permanent resident aliens who are women; (b) an enterprise in which the ownership interest of such women is real, substantial and continuing; (c) an enterprise in which such women ownership has and exercises the authority to control independently the day-to-day business decisions of the enterprise; (d) an enterprise authorized to do business in this state and independently owned and operated; (e) an enterprise owned by an individual or individuals, whose ownership, control and operation are relied upon for certification, with a personal net worth that does not exceed fifteen million dollars ($15,000,000), as adjusted annually on the first of January for inflation according to the consumer price index of the previous year; and (f) an enterprise that is a small business pursuant to subdivision twenty of this section.

A firm owned by a minority group member who is also a woman may be certified as a minority-owned business enterprise, a women-owned business enterprise, or both, and may be counted towards either a minority-owned business enterprise goal or a women-owned business enterprise goal, in regard to any Contract or any goal, set by an agency or authority, but such participation may not be counted towards both such goals. Such an enterprise's participation in a Contract may not be divided between the minority-owned business enterprise goal and the women-owned business enterprise goal.

MINORITY-OWNED BUSINESS ENTER- PRISE herein referred to as "MBE", shall mean a business enterprise, including a sole proprietorship, partnership or corporation that is: (a) at least fifty-one percent (51%) owned by one or more minority group members; (b) an enterprise in which such minority ownership is real, substantial and continuing; (c) an enterprise in which such minority ownership has and exercises the authority to control independently the day-to-day business decisions of the enterprise; (d) an enterprise authorized to do business in this state and independently owned and operated; (e) an enterprise owned by an individual or individuals, whose ownership, control and operation are relied upon for certification, with a personal net worth that does not exceed fifteen million dollars ($15,000,000.00), as adjusted annually on the first of January for inflation according to the consumer price index of the previous year; and (f) an enterprise that is a small business pursuant to subdivision twenty of this section.

MINORITY GROUP MEMBER shall mean a United States citizen or permanent resident alien who is and can demonstrate membership in one of the following groups: (a) Black persons having origins in any of the Black African racial groups; (b) Hispanic persons of Mexican, Puerto Rican, Domini- can, Cuban, Central or South American of either Indian or Hispanic origin, regardless of race; (c) Native American or Alaskan native persons having origins in any of the original peoples of North America. (d) Asian and Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian Subcontinent or Pacific Islands.

CERTIFIED ENTERPRISE **OR** ***BUSINESS*** shall mean a business verified as a minority or women-owned business enterprise pursuant to section 314 of the Executive Law. A business enterprise which has been

approved by the New York Division of Minority & Women Business Development ("DMWBD") for minority or women-owned enterprise status subsequent to verification that the business enterprise is owned, operated, and controlled by minority group members or women, and that also meets the financial requirements set forth in the regulations.

2. TERMS. The parties to the attached State Contract agree to be bound by the following provisions which are made a part hereof (the word "Contractor" herein refers to any party other than the University:

1(a) Contractor and its Subcontractors shall undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination. For these purposes, affirmative action shall apply in the areas of recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff, or termination and rates of pay or other forms of compensation.

(b) Prior to the award of a State Contract, the Contractor shall submit an equal employment opportunity (EEO) policy statement to the University within the time frame established by the University.

(c) As part of the Contractor's EEO policy statement, the Contractor, as a precondition to entering into a valid and binding State Contract, shall agree to the following in the performance of the State Contract: (i) The Contractor will not discriminate against any employee or applicant for employment, will undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination, and shall make and document its conscientious and active efforts to employ and utilize minority group members and women in its work force on State Contracts;(ii) The Contractor shall state in all solicitations or advertisements for employees that, in the performance of the State Contract, all qualified applicants will be afforded equal employment opportunities without discrimination; (iii) At the request of the University the Contractor shall request each employment agency, labor union, or authorized representative of workers with which it has a collective bargaining or other agreement or understanding, to furnish a written statement that such employment agency, labor union, or representative will not discriminate, and that such union or representative will affirmatively cooperate in the implementation of the Contractor's obligations herein.

(d) Form 108 - Staffing Plan To ensure compliance with this Section, the Contractor shall submit a staffing plan to document the composition of the proposed workforce to be utilized in the performance of the Contract by the specified categories listed, including ethnic background, gender, and Federal occupational categories. Contractors shall complete the Staffing plan form and submit it as part of their bid or proposal or within a reasonable time, but no later than the time of award of the contract.

(e) Form 112 - Workforce Employment Utilization Report ("Workforce Report")

(i) Once a contract has been awarded and during the term of Contract, Contractor is responsible for updating and providing notice to SUNY of any changes to the previously submitted Staffing Plan. This information is to be submitted on a quarterly basis during the term of the contract to report the actual workforce utilized in the performance of the contract by the specified categories listed including ethnic background, gender, and Federal occupational categories. The Workforce Report must be submitted to report this information.

(ii) Separate forms shall be completed by Contractor and any subcontractor performing work on the Contract.

(iii) In limited instances, Contractor may not be able to separate out the workforce utilized in the performance of the Contract from Contractor's and/or subcontractor's total workforce. When a separation can be made, Contractor shall submit the Workforce Report and indicate that the information provided related to the actual workforce utilized on the Contract. When the workforce to be utilized on the contract cannot be separated out from Contractor's and/or subcontractor's total workforce, Contractor shall submit the Workforce Report and indicate that the information provided is Contractor's total workforce during the subject time frame, not limited to work specifically under the contract.

(f) Contractor shall comply with the provisions of the Human Rights Law, all other State and Federal statutory and constitutional non-discrimination provisions. Contractor and subcontractors shall not discriminate against any employee or applicant for employment because of race, creed (religion), color, sex, national origin, sexual orientation, military status, age, disability, predisposing genetic characteristic, marital status or domestic violence victim status, and shall also follow the requirements of the Human Rights Law with regard to non-discrimination on the basis of prior criminal conviction and prior arrest.

(g) The Contractor shall include the provisions of this section in every Subcontract in such a manner that the requirements of the provisions will be binding upon each Subcontractor as to work in connection with the State Contract, including the requirement that Subcontractors shall undertake or continue existing programs of affirmative action to ensure that minority group members and women are afforded equal employment opportunities without discrimination, and, when requested, provide to the Contractor information on the ethnic background, gender, and Federal occupational categories of the

employees to be utilized on the State Contract.

(h) To ensure compliance with the requirements of this paragraph, the University shall inquire of a Contractor whether the work force to be utilized in the performance of the State Contract can be separated out from the Contractor's and/or Subcontractors' total work force and where the work of the State Contract is to be performed. For Contractors who are unable to separate the portion of their work force which will be utilized for the performance of this State Contract, Contractor shall provide reports describing its entire work force by the specified ethnic background, gender, and Federal Occupational Categories, or other appropriate categories which the agency may specify.

(i) The University may require the Contractor and any Subcontractor to submit compliance reports, pursuant to the regulations relating to their operations and implementation of their affirmative action or equal employment opportunity program in effect as of the date the State Contract is executed.

(j) If a Contractor or Subcontractor does not have an existing affirmative action program, the University may provide to the Contractor or Subcontractor a model plan of an affirmative action program. Upon request, the Director of DMWBD shall provide a contracting agency with a model plan of an affirmative action program.

(k) Upon request, DMWBD shall provide the University with information on specific recruitment sources for minority group members and woman, and contracting agencies shall make such information available to Contractors

3. Contractor must provide the names, addresses and federal identification numbers of certified minority- and women-owned business enterprises which the Contractor intends to use to perform the State Contract and a description of the Contract scope of work which the Contractor intends to structure to increase the participation by Certified minority- and/or women-owned business enterprises on the State Contract, and the estimated or, if known, actual dollar amounts to be paid to and performance dates of each component of a State Contract which the Contractor intends to be performed by a certified minority- or woman-owned business enterprise. In the event the Contractor responding to University solicitation is joint venture, teaming agreement, or other similar arrangement that includes a minority- and women owned business enterprise, the Contractor must submit for review and approval: i. the name, address, telephone number and federal identification of each partner or party to the agreement; ii. the federal identification number of the joint venture or entity established to respond to the solicitation, if applicable; iii. A copy of the joint venture, teaming or other similar arrangement which describes the percentage of interest owned by each party to the agreement and the value added by each party; iv. A copy of the mentor-protégé agreement between the parties, if applicable, and if not described in the joint venture, teaming agreement, or other similar arrangement.

4. PARTICIPATION BY MINORITY GROUP MEMBERS AND WOMEN. The University shall determine whether Contractor has made conscientious and active efforts to employ and utilize minority group members and women to perform this State Contract based upon an analysis of the following factors:

(a) Whether Contractor established and maintained a current list of recruitment sources for minority group members and women, and whether Contractor provided written notification to such recruitment sources that contractor had employment opportunities at the time such opportunities became available.

(b) Whether Contractor sent letters to recruiting sources, labor unions, or authorized representatives of workers with which contractor has a collective bargaining or other agreement or understanding requesting assistance in locating minority group members and women for employment.

(c) Whether Contractor disseminated its EEO policy by including it in any advertising in the news media, and in particular, in minority and women news media.

(d) Whether Contractor has attempted to provide information concerning its EEO policy to Subcontractors with which it does business or had anticipated doing business.

(e) Whether internal procedures exist for, at a minimum, annual dissemination of the EEO policy to employees, specifically to employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions. Such dissemination may occur through distribution of employee policy manuals and handbooks, annual reports, staff meetings and public postings.

(f) Whether Contractor encourages and utilizes minority group members and women employees to assist in recruiting other employees.

(g) Whether Contractor has apprentice training programs approved by the N.Y.S. Department of Labor which provides for training and hiring of minority group members and women.

(h) Whether the terms of this section have been incorporated into each Subcontract which is entered into by the Contractor.

5. PARTICIPATION BY MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES. Based upon an analysis of the following factors, the University shall determine whether Contractor has made good faith efforts to provide for meaningful participation by minority-owned and women-owned business enterprises which have been certified by DMWBD:

(a) Whether Contractor has actively solicited bids for Subcontracts from qualified

M/WBEs, including those firms listed on the Directory of Certified Minority and Women- Owned Business Enterprises, and has documented its good faith efforts towards meeting minority and women owned business enterprise utilization plans by providing, copies of solicitations, copies of any advertisements for participation by certified minority- and women-owned business enterprises timely published in appropriate general circulation, trade and minority- or women-oriented publications, together with the listing(s) and date(s) of the publications of such advertisements; dates of attendance at any pre-bid, pre-award, or other meetings, if any, scheduled by the University, with certified minority- and women-owned business enterprises, and the reasons why any such firm was not selected to participate on the project.

(b) Whether Contractor has attempted to make project plans and specifications available to firms who are not members of associations with plan rooms and reduce fees for firms who are disadvantaged.

(c) Whether Contractor has utilized the services of organizations which provide technical assistance in connection with M/WBE participation.

(d) Whether Contractor has structured its Subcontracts so that opportunities exist to complete smaller portions of work.

e) Whether Contractor has encouraged the formation of joint ventures, partnerships, or other similar arrangements among Subcontractors.

(f) Whether Contractor has requested the services of the Department of Economic Development (DED) to assist Subcontractors' efforts to satisfy bonding requirement.

(g) Whether Contractor has made progress payments promptly to its Subcontractors.

(h) Whether the terms of this section have been incorporated into each Subcontract which is entered into by the Contractor. It shall be the responsibility of Con- tractor to ensure compliance by every Subcontractor with these provisions.

6. MWBE Utilization Plan.

(a) The Contractor represents and warrants that Contractor has submitted an MWBE Utilization Plan prior to the execution of the contract.

(b) MWBE Utilization Plan (Form 7557-107).

Contractors are required to submit a Utilization Plan on Form 7557-107 with their bid or proposal. Complete the following steps to prepare the Utilization Plan:

i. list NYS Certified minority- and women-owned business enterprises which the Contractor intends to use to perform the State contract;
ii. insert a description of the contract scope of work which the Contractor intends to structure to increase the participation by NYS Certified minority- and women-owned enterprises on the State contract;
iii. insert the estimated or, if known, actual dollar amounts to be paid to and performance dates of each component of a State contract which the Contractor intends to be performed by a NYS Certified minority- or women-owned business; and

(c) Any modifications or changes to the agreed participation by NYS Certified MWBEs after the Contract Award and during the term of the contract must be reported on a revised MWBE Utilization Plan and submitted to the SUNY University-wide MWBE Program Office.

(d) The University will review the MWBE Utilization Plan and will issue the Contractor a written notice of acceptance or deficiency within twenty (20) day of its receipt. A notice of deficiency shall include the:

i. list NYS Certified minority- and women-owned business enterprises which the Contractor intends to use to perform the State contract;
ii. name of any MWBE which is not acceptable for the purpose of complying with the MWBE participation goals;
iii. reasons why it is not an acceptable element of the Contract scope of work which the MWBE Program Office has determined can be reasonably structured by the Contractor to increase the likelihood of participation in the Contract by MWBEs; and
iv. other information which the MWBE Program Office determines to be relevant to the MWBE Utilization Plan.

(e) The Contractor shall respond to the notice of deficiency within seven (7) business days of receipt by submitting to the University a written remedy in response to the notice of deficiency.

i. If the written remedy that is submitted is not timely or is found to be inadequate, the University-wide MWBE Program Office shall notify the Contractor and direct the Contractor to submit, within five (5) business days, a request for partial or total waiver of MWBE participation goals on forms provided by the University-wide MWBE Program Office.
ii. Failure to file the waiver form in a timely manner may be grounds for disqualification of the bid or proposal.

(f) The University may disqualify a Contractor as being non-responsive under the following circumstances:

i. If a Contractor fails to submit a MWBE Utilization Plan;
ii. If a Contractor fails to submit a written remedy to a notice of deficiency in a MWBE Utilization Plan;
iii. If a Contractor fails to submit a request for waiver; or

iv. If the MWBE Program Office determines that the Contractor has failed to document Good Faith Efforts.

(g) Contractor agrees to use such MWBE Utilization Plan for the performance of MWBEs on the Contract pursuant to the prescribed MWBE goals set forth in Section III-A of this Appendix.

(h) Contractor further agrees that a failure to submit and/or use such MWBE Utilization Plan shall constitute a material breach of the terms of the Contract. Upon the occurrence of such a material breach, SUNY shall be entitled to any remedy provided herein, including but not limited to, a finding of Contractor non-responsiveness.

7. Waivers.
(a) For Waiver Requests Contractor should use (Form 7557-114) – Waiver Request.

(b) If the Contractor, after making good faith efforts, is unable to comply with MWBE goals, the Contractor may submit a Request for Waiver form documenting good faith efforts by the Contractor to meet such goals. If the documentation included with the waiver request is complete the University shall evaluate the request and issue a written notice of acceptance or denial within twenty (20) days of receipt.

(c) If University, upon review of the MWBE Utilization Plan and updated Quarterly MWBE Contractor Compliance Reports determines that Contractor is failing or refusing to comply with the Contract goals and no waiver has been issued in regards to such non-compliance, the University may issue a notice of deficiency to the Contractor. The contractor must respond to the notice of deficiency within seven (7) business days of receipt. Such response may include a request for partial or total waiver of MWBE Contract Goals.

8. MWBE Contractor Compliance Report.
Contractor is required to submit an MWBE Contractor Compliance Report (Form 7557-112) to the University by the 5th day following each end of quarter over the term of the Contract documenting the progress made towards achievement of the MWBE goals of the Contract. Compliance Reports for construction contracts (Form 7557-110) must be submitted on a monthly basis.

9. GOALS. (a) GOALS FOR MINORITY AND WOMEN WORK FORCE PARTICIPATION.

(i) The University shall include relevant work force availability data, which is provided by the DMWBD, in all documents which solicit bids for State Contracts and shall make efforts to assist Contractors in utilizing such data to determine expected levels of participation for minority group members and women on State Contracts.

(ii) Contractor shall exert good faith efforts to achieve such goals for minority and women's participation. To successfully achieve such goals, the employment of minority group members and women by Contractor must be substantially uniform during the entire term of this State Contract. In addition, Contractor should not participate in the transfer of employees from one employer or project to another for the sole purpose of achieving goals for minority and women's participation.

(b) **GOALS FOR MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES PARTICIPATION.** For all State Contracts in excess of $25,000.00 whereby the University is committed to expend or does expend funds in return for labor, services including but not limited to legal, financial and other professional services, supplies, equipment, materials or an combination of the foregoing or all State Contracts in excess of $100,000.00 whereby the University is committed to expend or does expend funds for the acquisition, construction, demolition, replacement, major repair or renovation of real property and improvements thereon, Contractor shall exert good faith efforts to achieve a participation goal of ____25_ percent (__25___%) for Certified Minority-Owned Business Enterprises and __5___ percent (__5___%) for Certified Women-Owned Business Enterprises.

10. ENFORCEMENT. The University will be responsible for enforcement of each Contractor's compliance with these provisions. Contractor, and each Subcontractor, shall permit the University access to its books, records and accounts for the purpose of investigating and determining whether Contractor or Subcontractor is in compliance with the requirements of Article 15-A of the Executive Law. If the University determines that a Contractor or Subcontractor may not be in compliance with these provisions, the University may make every reasonable effort to resolve the issue and assist the Contractor
or Subcontractor in its efforts to comply with these provisions. If the University is unable to resolve the issue of noncompliance, the University may file a complaint with the DMWBD.

Failure to comply with all of the requirements herein may result in a finding of non-responsiveness, non-responsibility and/or a breach of contract, leading to the withholding of funds or such other actions, remedies or enforcement proceedings as allowed by the Contract.

11. DAMAGES FOR NON COMPLIANCE.
Where the University determines that Contractor is not in compliance with the requirements of the Contract and Contractor refuses to comply with such requirements, or if Contractor is found to have willfully and intentionally failed to comply with the MWBE participation goals, Contractor shall be obligated to pay

liquidated damages to the University. Such liquidated damages shall be calculated as an amount equaling the difference between:

a. All sums identified for payment to MWBEs had the Contractor achieved the contractual MWBE goals; and

b. All sums actually paid to MWBEs for work performed or materials supplied under the Contract.

In the event a determination has been made which requires the payment of liquidated damages and such identified sums have not been withheld by the University, Contractor shall pay such liquidated damages to the University within sixty (60) days after such damages are assessed, unless prior to the expiration of such sixtieth day, the Contractor has filed a complaint with the Director of the Division of Minority and Woman Business Development pursuant to Subdivision 8 of Section 313 of the Executive Law in which event the liquidated damages shall be payable if Director renders a decision in favor of the University.