Lake Metroparks
Erie Shores Golf Course
Restroom Renovation
Bid No. 2026-056

Lake County Probate Judge
Mark J. Bartolotta

Lake Metroparks Board of Park Commissioners
Gretchen Skok DiSanto
Frank J. Polivka
John C. Redmond, CPA

Executive Director
Paul Palagyi

October 27, 2026

INDEX TO SPECIFICATIONS

BIDDING MATERIAL

	No. of Pages
Specifications Table of Contents	1
Invitation to Bid - Legal Notice	1
Instructions to Bidder	4
Supplemental Instructions to Bidders	2
Prevailing Wage Determination Cover Letter	1
Bid Form Information	1
*Bid Form	
Bid Form Information	2
Pricing Sheet	1
Offer Sheet	1
Bidders Signature & Business Information	1
Request for Approved Equal	1
Affidavit of Non-Collusion	2
Instructions & Affidavit of Delinquent Personal Property Tax Statement	2
Statement of Bidder's Qualifications and Experience	2
Bid Guarantee and Performance Bond	2
Checklist of Bid Proposal Forms	1

CONTRACT MATERIAL

Board-Contractor Agreement (sample)	1-14
Contract Forms	
Application & Certificate for Payment - AIA Document G-702 and G-703	2
Certificate of Substantial Completion - AIA Document G-704	1
Consent of Surety to Final Payment - AIA Document G-707	1
Affidavit of Contractor - Ohio Legal Blank Form 47	2
Waivers of Liens for Material and Labor - Ohio Legal Blank, Form 50B	1
Affidavit of Prevailing Wages	1
List of Drawing Index	1

*** Bid Form must be purchased through SE Blueprint, Inc. 2035 Hamilton Avenue, Cleveland, Ohio 44114 (216) 241-2250 or www.seblueprint.com.**

SPECIFICATIONS TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS
SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION
SECTION 017839 - PROJECT RECORD DOCUMENTS

DIVISION 02 - EXISTING CONDITIONS
SECTION 024119 – SELECTIVE STRUCTURE DEMOLITION

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES
SECTION 061053 - MISCELLANEOUS WOOD CARPENTRY
SECTION 061600 – SHEATHING
SECTION 062023 - INTERIOR FINISH CARPENTRY

DIVISION 07 - THERMAL AND MOISTURE PROTECTION
SECTION 079200 - JOINT SEALANTS

DIVISION 08 - OPENINGS
SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

DIVISION 09 - FINISHES
SECTION 092900 - GYPSUM BOARD
SECTION 095113 – ACOUSTICAL PANEL CEILINGS
SECTION 096513 - RESILIENT BASE AND ACCESSORIES
SECTION 096723 – RESINOUS FLOORING
SECTION 097720 – DECORATIVE FIBERGLASS REINFORCED WALL PANELS
SECTION 099123 - INTERIOR PAINTING

DIVISION 10 - SPECIALTIES
SECTION 102113 - PLASTIC TOILET COMPARTMENTS
SECTION 102800 – TOILET, BATH, AND LAUNDRY ACCESSORIES

DIVISION 12 – FURNISHINGS
SECTION - 123216 MANUFACTUERED PLASTIC LAMINATE FACED CASEWORK
SECTION - 123661.16 SOLID SURFACING COUNTERTOPS

INVITATION TO BID - LEGAL NOTICE

Sealed bids will be received at Lake Metroparks Administrative Offices, 11211 Spear Road, Concord Township, Ohio 44077 until **10:00 A.M.** local time, on **November 11, 2026** and thereafter will be publicly opened, read and recorded for the following:

NAME OF PROJECT: Erie Shores Golf Course Restroom Renovation
BID NUMBER: 2026-056
PRE-BID MEETING: November 5, 2026 at 1:00 P.M. (7298 Lake Road East, Madison, Ohio 44057)

All documents, specifications, plans, etc., can be VIEWED AND PURCHASED at www.seblueprint.com. Copies may be PURCHASED for $30.00 (Thirty Dollars), (non-refundable fee) through SE Blueprint, Inc., 2035 Hamilton Avenue, Cleveland, Ohio 44114, (216) 241-2250. A $15 shipping/delivery fee is applicable for each set of Bidding Documents. Documents may also be REVIEWED, at Lake Metroparks Administrative Offices, 11211 Spear Road, Concord Township, Ohio 44077 or at www.lakemetroparks.com, click on “About Us”.

Project has been determined to meet the prevailing wage threshold.

Each bid *($75,000 or greater)* shall be accompanied by a Bid Guarantee in the form of either:

1. A certified check or cashier's check (Bid Check) made payable to "Lake Metroparks", in an amount equal to 10% of the bid amount conditioned to provide that if the bid is accepted the bidder will enter into a proper contract for the work; or
2. A Bid Guarantee and Performance Bond, for the full amount of the bid as provided in Section 153.571 of the Ohio Revised Code. A form of this bond is included in the Bidding Documents.

Bids must be submitted in sealed envelopes and clearly marked with the Bid No. and Project Title. No bid may be withdrawn before sixty (60) days have elapsed after the Bid Opening Date. This bond shall be written on an acceptable surety company authorized to do business in the State of Ohio and in an amount equal to 100% of the contract price. Bid guaranties of all unsuccessful bidders will be held until a proper contract is entered into or until all bids are rejected, as the case may be, and will be returned immediately thereafter. The successful bidder shall be required to file, at the time a contract is entered into, a Performance Bond and Labor and Material Payment Bond.

The Board intends to award a contract to the lowest and best bidder whose bid is submitted in accordance with the requirements of these bidding documents and does not exceed the funds available for the Project. The Board reserves the right to accept separate bids on various items of work, or to accept any combination of bids, or to reject any or all bids, and to waive any technical deficiencies or irregularities in bids.

BY THE ORDER OF **Lake Metroparks Board of Park Commissioners**
Paul Palagyi, Executive Director

Published: News-Herald, SE Blueprint and www.lakemetroparks.com on **October 27, 2026**.

INSTRUCTION TO BIDDERS

1. Bidding Documents

1.1 Copies of the Contract Documents, including any Drawings and Specifications, may be obtained for bidding purposes upon the conditions set forth in the Invitation to Bid.

1.2 Persons or entities other than the bidder may view the Contract Documents at locations stated in the Invitation to Bid or at the office of the bidder. Persons or entities desiring additional information shall request such information from the bidder who shall then make a written request on its own letterhead to the Board for the additional information. The requesting person or entity shall bear the costs of printing and handling or any other cost arising from production of the requested information and shall be billed for printing costs directly by the printing company.

1.3 The bidder shall be responsible for advising any suppliers, subcontractors or sub-subcontractors of any alternates or changes to the Drawings and Specifications that may be issued as Addenda, and the Board assumes no responsibility for any bidder's failure to do so. The Board assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

1.4 All prices and notations must be in ink or typewritten. Mistakes may be crossed out and corrections typed or printed adjacent to the mistake and initialed in ink by the person who signs bid. Prices shall be stated in units and quotations made separately on each item. In case of conflict, unit prices will govern. Where there is a conflict between words and figures, words will govern.

1.5 Bidders who have received this document from an outside source, not the Issuing Office (Lake Metroparks Planning Department), or obtained the documents from the Lake Metroparks website, should immediately contact the Issuing Office and provide their name, mailing address, email address, phone/fax number in order to be placed on the BIDDERS LIST. Bidders who fail to notify the Issuing Office with this information assume complete responsibility in the event that they do not receive communications from the Issuing Office prior to the closing date.

2. Bid Form

2.1 Bids must be made on the documents furnished in the Bid Documents. Each bid must contain the full name of all persons or entities submitting the bid and any parties-in-interest to such persons or entities.

2.2 Bids made by unincorporated entities or partnerships must set forth the name and place of residence or each principal or partner thereof, respectively.

2.3 Bids made by corporations must indicate the state of incorporation and the names and titles of officers having authority to sign the bid and Contract on behalf of the corporation. A copy of the corporate resolution authorizing those officers' signatures of the bid and Contract must be attached to the bid.

2.4 Proposals shall be addressed and sent to the address stated in the Invitation to Bid. Before the Board may consider any proposal, the Board must receive the proposal on or before the date and hour set for opening the bids. Conditions, limitations or provisions other than those expressly called for by any bidding document inserted as part of the proposal may cause the bid to be rejected by the Board.

2.5 Alterations of any Contract Document by erasure or interlineations must be explained or noted in such Contract Document over signature of bidder.

3. General Requirements

3.1 Bidders may bid on any or all parts of the Work and on any alternate described in the Contract Documents. Bidders may bid on any combination of contracts to be let in connection with the Project provided that the bidder must be engaged in the type of work for which the bid is submitted.

3.2 The Board reserves the right to accept bids in the combinations shown on the bid form, or to reject any or all bids, and to waive any technical deficiencies or irregularities in bids.

3.3. No contract will be awarded to any bidder who is in arrears to the Board for any debt or contractual obligation or who is in default as a surety or otherwise on any obligation owed to the Board.

3.4. Oral, telephonic or telegraphic bids are invalid and will not receive consideration.

3.5 The bidder shall submit a properly executed statement regarding personal property taxes in accordance with the enclosed statement entitled "Personal Property Tax Delinquency."

3.6 The Bidder (Prime Contractor) shall supply a minimum of 15% of the total labor force required to complete this Project, exclusive of supervisory and administrative personnel.

4. Bonds or Guaranties

(Note - Bid Guarantee and Performance Bond are only required on Bids/Proposals in excess of $75,000)

4.1 A Bid Guarantee in the amount and manner prescribed in the Invitation to Bid shall accompany each bid.

4.2 The bidder shall furnish a Performance Bond and Labor and Material Payment Bond in the manner and amount prescribed in the Invitation to Bid.

4.3. The Board reserves the right to retain the Bid Guarantees of all bidders for a period of sixty (60) days after the bids are opened and read. During this sixty-day period, no bid may be withdrawn without the Board's permission or as otherwise provided by law. Bidders to whom contracts are awarded shall execute the contracts within (5) five days from the date of these bidders' receipt of notice of the contract award. Bidders whose Bid Guarantees are in a form other than the form set forth in section 153.571 of the Ohio Revised Code shall provide sureties in conjunction with execution of the contracts. Failure of any bidder to execute a contract or provide sureties within the time specified will be deemed an abandonment of the contract, will result in forfeiture by the bidder of its Bid Guarantee.

5. Examination of Drawings, Specifications and Work Site

5.1 Prior to submitting a bid, each bidder shall carefully examine the Drawings, Specifications and all other Contract Documents as well as visit the site of the Work to fully apprise itself of all conditions and limitations under which the Work will be performed. The bid shall reflect the costs of all items necessary to perform the Work. No allowances will be made to any bidder because of a lack of examination of the Contract Documents or inspection of the Work Site, and upon submission of the bid, the bidder shall be deemed to have made such examination and inspection.

6. Statement of Bidder's Qualifications

6.1 Each bidder shall complete and submit the enclosed "STATEMENT OF BIDDER'S QUALIFICATIONS".

7. Disclosures

7.1 The bidder to whom the Contract is awarded shall within seven (7) calendar days of notification of such award submit in writing to the Board the following information:

(a) the nature and extent of Work to be performed by the bidder's own employees and forces;
(b) the names of suppliers of principal items, systems, materials or equipment proposed to be used for the Work as well as the names and descriptions of such items, systems, materials or equipment; and
(c) the names of any Subcontractors and Sub-subcontractors proposed to be used for any part of the Work.

7.2 Bidders shall establish to the satisfaction of the Board the reliability and capability of any proposed Subcontractors, Sub-subcontractor or supplier.

7.3 Persons or entities proposed by bidders to be Subcontractors, Sub-subcontractors or suppliers must perform the Work for which they were initially proposed and shall not be removed or replaced without prior written consent of the Board.

7.4 The qualifications of all subcontractors must be included in the bid package as noted in the detailed specifications.

8. Working Hours

8.1 Bids shall be based on the assumption that the Work will be performed on an eight (8) hour day, five (5) days a week basis. Any overtime expenses necessary to meet the construction schedule shall be borne by the contractor.

9. Administration of the Contract and Any Other Prime Contracts Relating to the Project

9.1 The Bidder awarded the General Trades Contract shall be the Contract Administrator and as such shall schedule and coordinate the work performed under its contract as well as any work performed under any other prime contracts relating to the Project. The Contract Administrator shall include in its bid all costs involved in the scheduling and coordination of such work, including but not limited to costs attributable to compiling progress reports.

9.2 The Contract Administrator shall schedule, coordinate and direct all phases of construction to ensure timely completion of the Project. All prime contractors and Subcontractors shall cooperate with the Contract Administrator in preparing the work schedule and maintaining construction progress in accordance with the schedule. They shall also provide requested information to the Contract Administrator on a monthly basis to assist the Contract Administrator in performing its responsibilities as such. Failure of any prime contractor or any Subcontractor to cooperate with the Contract Administrator shall be deemed by the Board to be a breach of contract by the party failing to so cooperate.

9.3 The Board shall not certify monthly payments for any prime contractor until it receives from the Contract Administrator certification that such prime contractor's work progress is satisfactory and that the prime contractor is completing its work according to the schedule prepared by the Contract Administrator.

9.4 Progress meetings shall occur on the same day and hour each week for the duration of the Project, or as otherwise agreed to by the Board, prime contractors and subcontractors. The Board shall distribute accurate minutes of these meetings to all prime contractors. Decisions reached at such meetings shall be binding upon all parties involved in the Project.

9.5 The Contract Administrator shall prepare and submit to the Board a progress schedule for the Project. Upon the Board's approval of the schedule, the Contract Administrator shall furnish four (4) copies to the Board. The schedule shall be revised monthly or as otherwise necessary to ensure timely completion of the Project. The schedule and all revisions thereof, as approved by the Board, shall be binding upon all parties involved in the Project.

9.6 The Contract Administrator shall coordinate the distribution of all Drawings for the Project. A copy of such Drawings shall be kept at the job site at all times.

10. Wage Rates

10.1 Any bidder awarded the Contract shall comply with the Wage Rate Requirements as described in Section 6 in Supplemental Instructions to Bidders in this this Document and ARTICLE 12 of the BOARD-CONTRACTOR AGREEMENT.

11. Discrimination

11.1 Any bidder awarded the Contract shall comply with ARTICLE 21 of the BOARD-CONTRACTOR AGREEMENT.

End of Instructions to Bidders

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

1. Questions about the Project

1.1 All questions concerning the Project shall be referred to:

Lake Metroparks Representative:
Tim Lane
Park Planner
(440) 639-7275 ext. 1608
tlane@lakemetroparks.com

2. Pre-bid Conference

2.1 There will be a pre-bid conference for this project on the dates(s) listed below. Attendance is recommended.

Date	Location	Time
November 5, 2026	7298 Lake Road East, Madison, Ohio 44057	1:00 P.M.

3. Proposed Schedule for Project Completion

3.1 This schedule reflects the anticipated time required to complete the work defined in the specifications and shown on the drawings. Bidders are requested to submit with their bid, their proposed schedule for completion of the work described.

Advertised Public Bidding ……..	October 27, 2026
Pre-Bid Conference …….....	November 5, 2026
Bid Opening ……	November 11, 2026
Award of Bid by Board ……...	November 18, 2026
Authorization to Proceed and Contracts …….	November 23, 2026
Construction to Commence …….....	December 1, 2026
Substantial Completion ……...	March 19, 2027
Punch List Completion ……	March 24, 2027
Occupancy by Lake Metroparks and Final Completion ….	March 29,2027

The work shall commence no later than five (5) days after the Contractor's receipt of written notice to commence work, and, subject to authorized adjustments

4. Time of Completion

4.1 **Substantial Completion**, as defined in Paragraph 4.3 & 4.5 of Board –Contractor Agreement, shall be achieved not later than the date of March 19, 2027, but not later than the **Final Completion Date** of March 29, 2027.

5. Estimate of Cost

5.1 The following is an estimated range of cost for completing the project:

BASE BID TOTAL RANGE: $145,000.00

6. Prevailing Wage Threshold Levels

6.1 Under guidelines established by AM Sub. H.B.350, if the Contract Sum under this Agreement exceeds the dollar thresholds established by the *Ohio Department of Employment Services - Wage and Hour Division*, the contractor(s) are required to conform to the prevailing wage rates as established by the Ohio Industrial Relations Board. Thresholds are to be adjusted biennially (every two years) by the Director of Ohio Department of Commerce.
Biennial adjustments to threshold levels are made according to the Price Deflator for Construction Index, United States Department of Commerce, Bureau of the Census.

6.2 Threshold Levels

"New" construction threshold for *Building* Construction – **$250,000**

"Reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting" threshold level for *Building* Construction – **$75,000**

As of January 1, 2026:

"New" construction that involves *roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction* threshold level has been adjusted to – **$101,201**

"Reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting" that involves *roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction* threshold level has been adjusted to – **$30,320**

6.3 The Prevailing Wage Determination Schedule for this project is available for review at the office of the Owner's Prevailing Wage Coordinator, or for the complete Prevailing Wage information packet please contact:
Ohio Department of Commerce
Division of Industrial Compliance and Labor
Bureau of Wage and Hour Administration
6606 Tussing Road, PO Box 4009
Reynoldsburg, Ohio 43068-9009
614-644-2239
www.com.ohio.gov/laws/

6.4 Current prevailing wage rates are available through the Ohio Department of Commerce at the following link:

http://www.com.ohio.gov/dico/

Prevailing Wage Determination Cover Letter

County: LAKE
Determination Date: October 27, 2026
Expiration Date: January 27, 2026

THE FOLLOWING PAGES ARE PREVAILING RATES OF WAGES ON PUBLIC IMPROVEMENTS FAIRLY ESTIMATED TO BE MORE THAN THE AMOUNT IN O.R.C. SEC. 4115.03 (b) (1) or (2), AS APPLICABLE. Section 4115.05 provides, in part: "Where contracts are not awarded or construction undertaken within ninety days from the date of the establishment of the prevailing wages, there shall be a redetermination of the prevailing rate of wages before the contract is awarded." The expiration date of this wage schedule is listed above for your convenience only. This wage determination is not intended as a blanket determination to be used for all projects during this period without prior approval of this Department.

Section 4115.04, Ohio Revised Code provides, in part: "Such schedule of wages shall be attached to and made a part of the specifications for the work, and shall be printed on the bidding blanks where the work is done by contract..."

The contract between the letting authority and the successful bidder shall contain a statement requiring that mechanics and laborers be paid a prevailing rate of wage as required in Section 4115.06, Ohio Revised Code. The contractor or subcontractor is required to file with the contracting public authority upon completion of the project and prior to final payment therefore an affidavit stating that he has fully complied with Chapter 4115 of the Ohio Revised Code.

The wage rates contained in this schedule are the "Prevailing Wages" as defined by Section 4115.03, Ohio Revised Code (the basic hourly rates plus certain fringe benefits). These rates and fringes shall be a minimum to be paid under a contract regulated by Chapter 4115 of the Ohio Revised Code by contractors and subcontractors. The prevailing wage rates contained in this schedule include the effective dates and wage rates currently on file. In cases where future effective dates are not included in this schedule, modifications to the wage schedule will be furnished to the Prevailing Wage Coordinator appointed by the public authority as soon as prevailing wage rates increases are received by this office.

"There shall be posted in a prominent and accessible place on the site of work a legible statement of the Schedule of Wage Rates specified in the contract to the various classifications of laborers, workmen, and mechanics employed, said statement to remain posted during the life of such contract." Section 4115.07, Ohio Revised Code.

Apprentices will be permitted to work only under a bona fide apprenticeship program if such program exists and if such program is registered with the Ohio Apprenticeship Council.

Section 4115.071 provides that no later than ten days before the first payment of wages is due to any employee of any contractor or subcontractor working on a contract regulated by Chapter 4115, Ohio Revised Code, the contracting public authority shall appoint one of his own employees to act as the prevailing wage coordinator for said contract. The duties of the prevailing wage coordinator are outlined in Section 4115.071 of the Ohio Revised Code.

Section 4115.05 provides for an escalator in the prevailing wage rate. Each time a new rate is established, that rate is required to be paid on all ongoing public improvement projects.

A further requirement of Section 4115.05 of the Ohio Revised Code is: "On the occasion of the first pay date under a contract, the contractor shall furnish each employee not covered by a collective bargaining agreement or understanding between employers and bona fide organizations of Labor with individual written notification of the job classification to which the employee is assigned, the prevailing wage determined to be applicable to that classification, separated into the hourly rate of pay and the fringe payments, and the identity of the prevailing wage Coordinator appointed by the public authority. The contractor or subcontractor shall furnish the same notification to each affected employee every time the job classification of the employee is changed."

Work performed in connection with the installation of modular furniture may be subject to prevailing wage.

THIS PACKET IS NOT TO BE SEPARATED BUT IS TO REMAIN COMPLETE AS IT IS SUBMITTED TO YOU. (Reference guidelines and forms are included in this packet to be helpful in the compliance of the Prevailing Wage law.)

BID FORM

Bid Form documents can only be purchased from SE Blueprint, Inc.

SE Blueprint, Inc.
2035 Hamilton Avenue
Cleveland, Ohio 44114
seblue@seblueprint.com
(216) 241-2250 phone
(216) 241-2075 fax

Contents of Bid Form:

Price Sheet
Offer Sheet
Bidders Signature & Business Information
Request for Approved Equal
Affidavit of Non-Collusion
Affidavit of Delinquent Personal Property Tax Statement
Statement of Bidder's Qualifications & Experience
Bid Guarantee and Performance Bond
Checklist of Bid Proposal Forms

Contract Forms

The following forms shall be used during the contract:

LAKE METROPARKS BOARD-CONTRACTOR AGREEMENT

AIA DOCUMENT G702 AND G703, APPLICATION & CERTIFICATE FOR PAYMENT

AIA DOCUMENT G704, CERTIFICATE OF SUBSTANTIAL COMPLETION

AIA DOCUMENT G707, CONSENT OF SURETY COMPANY TO FINAL PAYMENT

OHIO LEGAL BLANK FORM 47, AFFIDAVIT OF ORIGINAL OR SUB-CONTRACTOR

OHIO LEGAL BLANK FORM 50 B, WAIVER OF LIEN

AFFIDAVIT OF PREVAILING WAGES

L A K E M E T R O P A R K S
B O A R D - C O N T R A C T O R A G R E E M E N T

11211 SPEAR ROAD, CONCORD TOWNSHIP, OHIO 44077
(440) 639-7275

CONTRACT INFORMATION

NAME OF CONTRACT:

LOCATION:

Bid No: _____ Bid Open: _____ Contract Amount: _____

P.O Number: _____ Board Approval: _____ Completion Date: _____

CONTRACTOR INFORMATION

_____

_____

_____

_____

BONDING / SURETY INFORMATION

Surety/Bond Company

_____

_____

_____

_____

_____

_____

MISCELLANEOUS INFORMATION

SIGNED CONTRACT RECEIVED _____

PERFORMANCE BOND _____

WORKER'S COMP. CERTIFICATE _____

CERTIFICATE OF INSURANCE _____

SAMPLE

BOARD-CONTRACTOR AGREEMENT

THIS AGREEMENT (AKA the "CONTRACT") is made between Lake Metroparks Board of Park Commissioners (the “BOARD”) of the State of Ohio and CONTRACTOR. (the "Contractor") of the State of Ohio. This Contract shall be effective on the last date set forth on the signature page.

Article 1
THE CONTRACT DOCUMENTS

1.1 The Contract Documents consist of the Instructions to Bidders, if any, the bid of the Contractor (Including his bid guarantee), if any, the Contractor's performance bond, this Contract and all schedules and exhibits attached hereto, the Drawings, if any, listed on Schedule A hereto by issue date and revision date, the Specifications (both general and technical) contained in the Project Manual, if any, and any Addenda issued prior to the Execution of this Contract and modifications issued after execution of this Contract (such as Change Orders and Field Orders for minor changes in the Work). These form the binding Contract Documents if required by all. Capitalized terms used herein shall be defined as stated in Article 2 hereof or elsewhere in the Contract Documents. In the event of any inconsistency between this Contract and any of the other Contract Documents, the provisions of this Contract shall control. The intent of the Contract Documents is to include all labor, materials, equipment and other items necessary for the proper execution and completion of the Work and the terms and conditions of payment therefore. Work not covered in the Contract Documents will not be required unless it is consistent therewith and reasonably inferable there from as being necessary to produce the intended results. All of the Contract Documents form the total Contract, and all are as fully a part of the Contract as if attached hereto or repeated herein.

1.2 Nothing contained in the Contract Documents shall create any contractual relationship between the Board and any Subcontractor or Sub-subcontractor.

1.3 By executing this Contract, the Contractor represents that he has visited the site and familiarized itself with the local conditions under which the Work is to be performed.

Article 2
DEFINITIONS

2.1 The Project Manager will provide administration of the Contract and is an Authorized Agent of the Board. The Project Manager will have authority to act on behalf of the Board only to the extent provided in the Contract Documents.

2.2 Subcontractor is a person or entity who has a direct contract with the Contractor to perform any of the Work at the site. A sub-subcontractor is a person or entity who has a direct contract with any Subcontractor to perform any of the Work at the site.

2.3 Instructions to bidders are instructions contained in the bidding requirements for preparing and submitting bids for the Work.

2.4 Specifications are written descriptions of a technical nature of materials, equipment construction systems, standards and workmanship.

2.5 Addenda are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the bidding documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda become part of the Contract Documents when the Contract is executed.

2.6 Samples are physical examples furnished by the Contractor for the Project Manager's review and approval, which illustrate materials, equipment or workmanship, and which establish standards by which the Work will be judged.

SAMPLE

2.7 Product Data is information furnished by the Contractor for the Project Manager's review and approval regarding materials or products to be used in the Work and which establish standards by which the Work will be judged.

2.8 Work comprises the completed structures, products or services, or any combination thereof, required by the Contract Documents, and includes all labor necessary to produce such structures, products or services, and all materials and equipment incorporated or to be incorporated in such structures, products or services.

2.9 Drawings and Plans are documents showing in graphic or pictorial form the design, location and dimension of the elements of the Work.

2.10 Application for Payment is the Contractor's written request for payment of amount due for completed portions of the Work and, if provided herein, for materials delivered and suitably stored pending their incorporation into the Work.

2.11 Project Manual is the manual containing any bidding documents, Specifications, and certain other Contract Documents.

2.12 Change Order is a written order to the Contractor, made and executed as provided in Article 17 hereof, issued after execution of the Contract, authorizing a Change in the Plans or an adjustment in the Contract Sum or the Contract Time.

2.13 Field Order is a written order issued by the Project Manager to the Contractor effecting minor interpretations of the Contract Documents or minor changes in the Work not involving an adjustment in the Contract sum or an extension of the Contract Time.

Article 3
THE WORK

3.1 The Contractor shall perform all Work required by the Contract Documents for **Lake Metroparks PROJECT**. As more fully described in Exhibit A hereto.

Article 4
TIME OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

4.1 The Work shall commence no later than five (5) days after the Contractor's receipt of written notice to commence work, and, subject to authorized adjustments. **Substantial Completion**, as defined in Section 4.3 hereof, shall be achieved no later than **DATE** (the "Contract time").

4.2 If the time for Substantial Completion is exceeded, the Board is hereby authorized to deduct and retain out of the payments that may be due or become due the Contractor liquidated damages, and not as a penalty, for each and every day the Work is delayed beyond the time so stipulated, it being understood and agreed that actual damages would be difficult to ascertain with precision in any such case and that the amount of such liquidated damages bears a reasonable relationship to the actual damages that may be projected.

Liquidated Damages will be based on Original Contract Amount.

SAMPLE

Original Contract Amount		Damages to be deducted for each calendar day of overrun
(From) $0	(To and Including) $50,000	$25.00
$50,001	$100,000	$50.00
$100,001	$300,000	$100.00
$300,001	$500,000	$200.00
$500,001	$750,000	$325.00
$750,001	$1,000,000	$450.00
$1,000,001	$1,500,000	$625.00
$1,500,001	$2,000,000	$875.00
OVER	$2,000,000	$1,000.00

4.3 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Board can occupy or utilize the Work for its intended use (subject only to minor punch list items which will not unreasonably interfere with the Board's full use, occupancy and enjoyment of the Project site), and all required occupancy permits, if any, have been issued. The Contractor shall thereafter use due-diligence to complete such minor punch list items to the end that Final Completion will be achieved within fourteen (14) days after Substantial Completion and shall cause the least possible interference with the Board, its employees and guests.

4.4 The Date of Substantial Completion of the Work is the date upon which the Board can occupy or utilize the Work for the use for which it is intended or upon which in all material respects it serves the purpose for which it was intended.

Article 5
CONTRACT SUM

5.1 The Board shall pay the contractor for the performance of the Work subject to deductions and additions by properly authorized written Change Orders as provided herein, the Contract Sum of AMOUNT ($). (Bid Amount in Lump Sum).

The Contract Sum is determined as follows:

1.	Item 1 Base Bid	$ XXX
	TOTAL, Not to Exceed	$ XXX

5.2 Unless otherwise directed by the contract documents, the Contractor shall include in the Contract Sum any Contingencies stated in the Contract Documents. Items covered by this Contingency shall be supplied for such amounts and by such persons as the Board may direct.

A. The Contingency shall cover the cost to the Contractor, less any applicable trade discount, of the materials and equipment required by the Contingency delivered at the site.

B. The Contractor's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the original contract shall be included in the Contract Sum and not in the Contingency.

SAMPLE

C. Whenever the cost is more than or less than the Contingency, the Contract Sum shall be adjusted accordingly by Change Order, the amount of which will recognize changes, if any, in handling costs on the site, labor, installation costs, overhead, profit and other expenses.

5.3 Within the Schedule of Items, several items may have cash Contingency assigned to them. This Contingency is ONLY an Estimate of what the item may actually cost. The final actual cost of the item(s) may be higher or lower than what is shown for the Contingency. The contractor will be paid ONLY for what is finally and actually installed. The contractor will provide all necessary documentation, invoices, receipts, time cards, payroll records, shipping tickets, records, data, etc. That indicates the actual and final cost of the item(s). If the actual and final cost of the item(s) is less than what is indicated in the Contingency amount, the Board shall receive a credit. If the actual and final cost of the item(s) is more than what is indicated in Contingency amount, the contractor will receive the correct amount, provided that all invoices and records, etc. are submitted to the Board.

Article 6
PROGRESS PAYMENTS

6.1 Based upon Applications for Payment submitted by the Contractor, the Project Manager may make progress payments on account of the Contract Sum.

6.2 Application for progress payments may be made on intervals as requested by the Contractor, but not more frequently than monthly.

6.3 Before the first Application for Payment, the Contractor shall submit to the Project Manager a schedule that apportions the lump sum price to the major components forming the work which schedule shall be prepared in such form and supported by such data to substantiate its accuracy as the Project Manager may require. This schedule, unless objected to by the Project Manager, shall be used only as a basis for the Contractor's applications for payment.

6.4 At least fourteen (14) days before the date for each progress payment, the Contractor shall submit to the Project Manager an itemized Application for Payment, notarized, supported by such data substantiating the Contractor's right to payment as the Project Manager may require, and reflecting retainage, if any, as provided in the Contract Documents.

6.5 The Project Manager will, within forty-five (45) days after the receipt of the Contractor's application for payment, either pay the amount that the Project Manager determines is properly due, or notify the Contractor in writing of the reasons for withholding payment.

6.6 No progress payment, nor any partial or entire use or occupancy of the Work by the Project Manager shall constitute an acceptance of any work not in accordance with the Contract Documents.

6.7 Progress payments for acceptable labor and work in place shall be made at the rate of ninety-six percent (96%) of the total amount approved by the Project Manager as an estimated progress payment, less former payments therein, provided that said work in place is free from any attested accounts, or from any claims for damages that might in any manner become a liability or charge against the Board, and except as herein provided, the allowance of such estimates shall not be deemed a final acceptance of the work or material therein included. The Project Manager upon receipt of the Contractor’s lien waivers from the contractor and his subcontractors, that indicate any and all liens and encumbrances on the Work have been fully discharged, will make such progress payments.

6.8 Retainage held, in order to ensure the faithful and proper performance of the Contract, shall be deposited in an escrow account as designated in Section 153.63 of the Ohio Revised Code. The escrow instructions to the escrow agent shall be in conformance with the provisions of this Contract and with Sections 153.13 and 153.63 of the Ohio Revised Code. This Section 6.8 shall not apply to contracts the total cost of which is less than fifteen thousand dollars ($15,000).

SAMPLE

6.9 If the Contractor fails to comply with the terms of any of the Contract Documents, or with the orders or directions of the Project Manager as provided herein, the Project Manager reserves the right to withhold any payment that may be due until such terms, orders or directions have been complied with to the satisfaction of the Project Manager.

6.10 Payments may be withheld on account of (1) defective work not remedied, (2) claims filed, (3) failure of the Contractor to make payments properly to Subcontractors or for labor, materials, or equipment, (4) damage to the Project Manager or another contractor, of (5) persistent failure to carry out the Work in accordance with the Contract Documents.

Article 7
FINAL PAYMENT

7.1 The Project Manager shall make final payment, constituting the entire unpaid balance of the Contract Sum, to the Contractor when the Work has been completed, the Contract fully performed, and any and all liens and encumbrances released and discharged.

7.2 Final payment shall not be due until the Project Manager determines that Substantial Completion of the Work has occurred and the Contractor has delivered to the Project Manager a complete release of all liens and encumbrances arising out of this Contract and/or the Work or receipts in full covering all labor, materials and equipment for which a lien could be filed, or a bond satisfactory to the Project Manager indemnifying it against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Project Manager all moneys the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees, if any liens remain unsatisfied prior to final payment to contractor, the Project Manager shall retain those funds until all appropriate executed and notarized lien waiver(s) are provided.

7.3 The making of final payment shall constitute a waiver of all claims by the Project Manager except those arising from (1) potential or unsettled liens, (2) faulty or defective Work appearing after Substantial Completion, (3) failure of the Work to comply with the requirements of the Contract Documents, or (4) terms of any special warranties required by the Contract Documents. The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final application for payment.

Article 8
THE BOARD

8.1 The Board shall at all times have access to the Work wherever it is in preparation and progress.

8.2 Based on the Board's observations and an evaluation of any application for payment, the Board will determine the amounts owing to the Contractor in accordance with Article 6.

8.3 The Board may reject Work that does not conform to the Contract Documents.

8.4 To the extent required for the Work, the Board shall furnish all surveys and a legal description of the site.

8.5 Except as provided in Section 9.5, the Board shall secure and pay for any approval, easement, assessment or charge required for any construction, use or occupancy of any permanent structure or permanent change in any existing facility.

8.6 The Board shall forward all instructions directly to the Contractor.

8.7 If the Contractor fails to correct defective Work or persistently fails to carry out the Work in accordance with the Contract Documents, The Board, by written order, may order the Contractor to stop the Work or any portion thereof, until the cause for such order has been eliminated; however, this right of the Board to stop the Work shall not give rise to any duty on the part of the Board to exercise this right for the benefit of the Contractor or any other person or entity.

SAMPLE

Article 9
THE CONTRACTOR

9.1 The Contractor shall supervise and direct the Work using its best skill and attention and shall be solely responsible for all means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract.

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

9.3 The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him.

9.4 The Contractor warrants to the Board that all materials and equipment incorporated in the Work will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not conforming to these requirements may be considered defective.

9.5 Unless otherwise indicated in the Contract Documents, the Contractor shall secure and pay for any building permit and for all other permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work.

9.6 The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the Work, and shall promptly notify the Board if the Drawings and Specifications, of any, are at variance therewith.

9.7 The Contractor shall be responsible to the Board for the acts and omissions of its employees and Subcontractors and their agents and employees, and any other persons performing any of the Work under a contract with the Contractor.

9.8 The Contractor shall review, approve and submit any Drawings, Product Data and Samples required by the Contract Documents. The Work shall be in accordance with approved submittals.

9.9 The Contractor at all times shall keep the premises free from accumulation of waste materials or rubbish caused by its operations. At the completion of the Work, it shall remove all of its waste materials and rubbish from and about the Work site as well as its tools, equipment, machinery and surplus materials.

9.10 The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringement of any patent, copyright, trade secured or other proprietary rights and shall save the Board harmless from loss on account thereof.

9.11 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Board and its agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorneys' fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense

A. is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including but not limited to the Work itself, including the loss of use resulting there from, and

B. is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Section 9.11. In any and all claims against the Board or any of its agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by either of them, or anyone for whose acts

SAMPLE

either of them may be liable, the indemnification obligation under this Section 9.11 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers or workmen's compensation acts, disability benefit acts or other employee benefit acts.

Article 10
SUBCONTRACTS

10.1 Unless otherwise required by the Contract Documents or the Bidding Documents, the Contractor, within seven (7) days of being awarded the Contract, shall furnish to the Board in writing the names of any Subcontractors for each of the principal portions of the Work. The Contractor shall not be required to contract with anyone to whom he has a reasonable objection. Contracts between the Contractor, which are to be performed by a Subcontractor, shall include language that shall bind the subcontractor to the same terms of the contract documents as to which the contractor is bound and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by such Contract Documents, assumes toward the Board.

Article 11
INSURANCE

11.1 The Contractor agrees to provide and maintain at its own expense, worker's compensation coverage that is in compliance with the laws of the State of Ohio.

A. The Contractor also agrees to provide and maintain, at its own expense, Contractor's general liability insurance, covering premises operations, underground, explosion and collapse hazards, products/completed operation, contractual liability, independent contractor's liability, broad form property damage liability, personal injury liability with the employee exclusion deleted, incidental malpractice and extended bodily injury. The Board is to be named as additional insured under the policy, and certification shall be provided prior to the award of the Contract.

B. Limits of liability for general liability coverage shall be a minimum of $1,000,000 combined single limit - bodily injury and property damage liabilities combined. The Board must be provided a minimum of (30) thirty days' notice of cancellation by the insurance carrier.

C. The Contractor shall also provide automobile liability insurance at limits not less than $1,000,000 combined single limit - bodily injury and property damage liabilities combined. Coverage must be extended to provide protection for liabilities arising from the use of hired or non-owned automobiles. Any fellow employee exclusion must be deleted. The Board must be named as additional insured under this policy, with certification and endorsement provided prior to the award of Contract. The Board must be provided a minimum of thirty (30) days' notice of cancellation by the insurance carrier.

11.2 The Board shall be responsible for purchasing and maintaining its own liability insurance and, at its option, may maintain such insurance as will protect it against claims which may arise from operations under the Contract.

Article 12
WAGE RATES

12.1 The Contractor and any Subcontractor shall comply with Chapter 4115 of the Ohio Revised Code. Failure by the Contractor to so comply will be deemed by the Board to be a breach of contract. A schedule of the wage rates applicable under said chapter will be furnished to the Contractor by the Board upon request, if such schedule is not included in any Project Manual. The Contractor and any Subcontractor must submit, before beginning performance under this Contract, a schedule of the dates upon which wage payments are to be made, and for each such date thereafter, a copy of his or its complete payroll for that date, exhibiting for each employee

SAMPLE

his name, current address, social security number, number of hours worked per day and for the week, his hourly rate of pay, job classification, fringe benefits and deductions from wages. The Contractor and any Subcontractor must file with the Board upon completion of the Work and prior to final payment therefore an affidavit stating that it has complied with Chapter 4115 of the Ohio Revised Code. This Section 12.1 shall apply only if the Contract Sum under this Contract exceeds the dollar thresholds established by the Ohio Department of Commerce, Division of Industrial Compliance, Bureau of Wage and Hour.

"New" construction threshold for *Building* Construction – **$250,000**

"Reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting" threshold level for *Building* Construction – **$75,000**

As of January 1, 2026:

"New" construction that involves *roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction* threshold level has been adjusted to – **$101,201**

"Reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting" that involves *roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction* threshold level has been adjusted to – **$30,320**

The Prevailing Wage Determination Schedule for this project is available for review at the office of the Owner's Prevailing Wage Coordinator and via the internet at http://www.com.ohio.gov/dico/default.aspx.

Article 13
WORK BY BOARD OR BY SEPARATE CONTRACTORS

13.1 The Board reserves the right to perform work related to the Work with its own personnel, and to award separate contracts in connection with portions of the Work or other work on the site. If the Contractor claims that delay or added cost is involved because of such action by the Board, he shall make such claim as he would under Section 17.4 hereof.

13.2 The Contractor shall afford the Board reasonable opportunity for the introduction and storage of their materials and equipment for the execution of their work, and shall coordinate its work with theirs.

Article 14
TIME

14.1 All time limits stated in the Contract Documents are of the essence. The Contractor shall expedite the Work and achieve Substantial Completion within the Contract Time.

14.2 If the Contractor is delayed at any time in the progress of the Work by changes ordered in the Work, labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonably anticipated, unavoidable casualties, or any causes beyond the Contractor's control, then the Contract Time shall be extended by Change Order for such reasonable time as the Board may determine.

Article 15
PROTECTION OF UNDERGROUND UTILITY FACILITIES

15.1 If the Work affects or otherwise involves underground utility facilities, both the Board and the Contractor shall adhere to the requirements of Section 153.64 of the Ohio Revised Code.

SAMPLE

Article 16
PROTECTION OF PERSONS AND PROPERTY

16.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. It shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to

A. All employees on the Work and other persons who may be affected thereby,

B. All the Work and all materials and equipment to be incorporated therein, and

C. Other property at the site or adjacent thereto.

He shall give all notices and comply with all applicable laws, ordinances, rules, regulations and orders of any public authority bearing on the safety of persons and property and their protection from damage, injury or loss. The Contractor shall promptly remedy all damage or loss to any property caused in whole or in part by the Contractor, any Subcontractor, any Sub-subcontractor, or anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable. The foregoing obligations of the Contractor are in addition to its obligations under Article 9.

Article 17
SAFETY POLICY

17.1 The Contractor shall comply with all requirements of the Lake Metroparks Contractor Safety Policy. This policy is designed to ensure all safety expectations are communicated and understood by all parties. All Contractors providing services to Lake Metroparks must

A. Comply with all Federal, State, and Local environmental, health and safety regulations.

B. Always wear all personal protective equipment (PPE), as appropriate.

C. Complete a Lake Metroparks Contractor Pre-Work Safety Plan prior to beginning any work.

D. Comply with Contractor's Liability Insurance requirement as outlined in Bid Documents.

E. Complete a hot work permit if required per applicable regulations.

F. Comply with the proper confined space permitting process, when required.

G. Avoid bringing hazardous chemicals on-site without approval from Lake Metroparks.

H. Drive with caution when in Lake Metroparks' parking lots and park drives.

I. Ensure that forklift and aerial lift operators have all required permits and training and that fall protection is used on lifts, when required.

J. Ensure that all contract employees understand the applicable emergency plan and know who to contact in an emergency.

K. Notify Lake Metroparks of any incidents in a timely manner.

L. Ensure that all subcontractors are also abiding by the terms of this plan.

M. Agree that all persons sent to Lake Metroparks are competent with the appropriate education, training, and experience to minimize the potential to cause incidents and injuries.

N. Provide any applicable documented training, certificates, licenses, etc. of all persons sent when requested by Lake Metroparks.

O. Maintain good housekeeping and a safe working environment.

P. Know who the project's applicable Lake Metroparks contacts are and contact them if the expectations set in this policy are compromised.

17.2 Failure to comply with this policy and its expectations will result in the termination of all contracts the Contractor holds with Lake Metroparks. Lake Metroparks reserves the right to suspend visitation rights of individuals for failure to comply with the above safety policy.

SAMPLE

Article 18
CHANGES IN THE PLANS

18.1 The Board, without invalidating the Contract, may order Changes in the Plans, consisting of additions, deletions, or modifications, the Contract Sum and the Contract Time being adjusted accordingly. All such Changes in the Plans shall be authorized by written Change Order, signed by the Board prior to any alleged Work commencing.

18.2 The Contract Sum and the Contract Time may be changed only by Change Order.

18.3 If the Contractor wishes to make any claim/proposal for an increase in the Contract Sum, because of claimed/proposed extra work, concealed conditions, or for any reason, no such claim/proposal for payment over and above the Contract Sum shall be authorized or valid unless each of the following occurs:

A. A written claim/proposal is made by the Contractor to the Board within twenty (20) days of the occurrence or event giving rise to the claim/proposal.

B. The claim/proposal is filed prior to proceeding with the claimed/proposed extra work; and

C. A written Change Order is issued, agreed to and signed by the Board/Project Manager.

18.4 The Contractor agrees that he shall have no compensation or claim/proposal for extra work that will increase the Contract Sum unless and until the procedures set forth above are followed and approved, and the Contractor hereby agrees that any claim/proposal for an increase in the Contract Sum will not be made and is waived and invalid hereunder, unless and until the procedures set forth above are followed and a duly approved written Change Order is issued prior to proceeding with any alleged extra work.

Article 19
CORRECTION OF WORK

19.1 The Contractor shall promptly correct any Work rejected by the Board as defective or as failing to conform to the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. Such correction shall be completed within the time period agreed to by the Board. The provisions of this Article 18 apply to Work done by any Subcontractor of Sub-subcontractor as well as to Work done by employees of the Contractor.

Article 20
TERMINATION OF THE CONTRACT

20.1 If the Contractor defaults or persistently fails or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision of the Contract, the Board, after seven days' written notice to the Contractor and without prejudice to any other remedy it may have, may make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor or, at its option, may terminate the Contact and take possession of the site and of all materials, equipment, tools, and any construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever method it may deem expedient, and if the unpaid balance of the Contract Sum exceed the expense of finishing the Work, such excess shall be paid to the Contractor, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the Board.

Article 21
DISCRIMINATION

21.1 The Contractor agrees:

A. That in the hiring of employees for the performance of work under this Contract or any subcontract, neither it nor any Subcontractor or Sub-subcontractor or any person acting on behalf of it or any Subcontractor or Sub-subcontractor shall, by reason of race, creed, sex, handicap, or color,

SAMPLE

discriminate against any citizen of the state who is qualified and available to perform the work to which the employment relates; and

B. That neither it nor any Subcontractor or Sub-subcontractor or any person acting on behalf of it or any Subcontractor or Sub-subcontractor shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this Contract on account of race, creed, sex, handicap, or color.

Article 22
MISCELLANEOUS PROVISIONS

22.1 Governing Law: This agreement shall be governed by the laws of the State of Ohio. Any claims, actions or causes of action that arise out of this agreement shall be brought in Lake County, Ohio. In signing this contract, the parties agree that venue for any claims shall be resolved solely by recourse to the Courts of Lake County, Ohio.

22.2 Written Notice: Written notice shall be deemed to have been served if delivered in person to the individual or member of the firm or entity or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known to him who gives the notice.

22.3 Board's Right To Clean Up: If a dispute arises between the Contractor and separate contractors as to their responsibility for cleaning up as required by the detailed specifications, the Board may clean up and charge the cost thereof to the contractors responsible therefore as it shall deem to be just.

22.4 Independent Contractor Acknowledgement: All individuals employed under this contract that provide services to Lake Metroparks are not considered public employees for the purpose of Ohio Public Employees Retirement System (OPERS) membership.

Article 23
GUARANTEE

23.1 The Contractor or the work as called for in the contract documents, in consideration of the price bid and the payments received or to be received, guarantees that all work done and all material used in the project under contract are in all respects first-class, of the proper kind and quality and has been done and is being done in accordance with the requirements of the contract documents, and also guarantees that the improvements will remain in good condition for and during the entire period of guarantee.

23.2 The period of guarantee shall begin upon the date of final acceptance by the Board in writing, of the construction work, and shall continue for a period of twelve (12) months thereafter or as otherwise provided in the general conditions.

23.3 If at any time before or during said period of guarantee, any defects or omissions become apparent in the work, or if it becomes apparent that any of the work is not in accordance with the requirements of the contract documents, or if any of the work constructed under this contract requires repairs due to defects in materials or workmanship, or for any other cause which may be attributed to the work which is being done by the Contractor, the Board or its authorized representative, will notify the Contractor to rectify such defects or omissions, or to make the repairs so required.

23.4 If the Contractor shall fail to begin to rectify such defects or omissions or to start such repairs within five (5) days from the date of such notification, or if such rectification or repair work is not made in a manner satisfactory to the Board or to its representative, the Board shall have the right to purchase any necessary materials, rent any necessary tools and equipment and to employ such other person or persons as may be deemed proper to make such repairs, and to pay the expense thereof out of moneys then due, or which may thereafter become due to the Contractor, or out of the amount retained for that purpose by the Board.

SAMPLE

23.5 If moneys to correct defects, omissions or to resolve any guarantee issues are not sufficient to meet such expense, the additional moneys shall be furnished by the Contractor, and if he refuses or neglects to provide the necessary moneys, they shall be provided by his sureties.

23.6 If it is necessary to remove any part of the work to rectify defects or omissions or to repair defects in materials or workmanship, or if any part of the work becomes damaged due to such rectification or repairing, all such shall be replaced or repaired, all to the satisfaction of the Director or said representative. The guarantee provisions shall also apply to all rectified or repaired work.

Lake Metroparks Board of Park Commissioners
11211 Spear Road, Concord Township, Ohio 44077

_____	_____	_____
Witness	Paul Palagyi, Executive Director	Date

APPROVED AS TO FORM

_____
Legal Counsel Date

and by
NAME
ADDRESS
ADDRESS

_____	_____	_____
Witness	CONTRACTOR	Date

SAMPLE

EXHIBIT A

The Work consists of providing of all labor, materials, equipment, appliances and services necessary, including those reasonable inferred, to furnish and install complete and operative systems for PROJECT DESCRIPTION as shown or specified in strict accordance with this specification and applicable drawings, and ready for use. See Contract Drawings and Specifications for details.

SAMPLE

APPLICATION AND CERTIFICATE FOR PAYMENT

Invoice #:

To Owner: LAKE METROPARKS
11211 Spear Road
Concord Twp, OH 44077
Paul Palagyi

Project:

Application #:

Period To:

Distribution to :

	Owner
	Architect
	Contractor

From Contractor:

Project Nos:

Via (Architect):

Contract Date:

Contract For:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contact.
Continuation Sheet is attached.

1. Original Contract Sum	$	-
2. Net Change By Change Order	$	-
3. Contract Sum To Date	$	-
4. Total Completed and Stored To Date	$	-
5. Retainage :		
a. 4.00% of Completed Work	$	-
b. 4.00% of Stored Material	$	-
Total Retainage	$	-
6. Total Earned Less Retainage	$	-
7. Less Previous Certificates For Payments		
8. Current Payment Due	$	-
9. Balance To Finish, Plus Retainage	$	-

CHANGE ORDER SUMMARY	Additions	Deductions
Total changes approved in previous months by Owner		$ -
Total Approved this Month	$ -	
TOTALS	$ -	$ -
Net Changes By Change Order		**$ -**

The undersigned Contractor certfies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: 0

By:_____Date:_____

State of: County of:
Subscribed and sworn to before me this day of

Notary Public:
My Commission expires:

SAMPLE

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the contract Documents, based on on-site observations and the data comprising the above application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED $ -

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this application on the Continuation Sheet that are changed to conform with the amount certified)

ARCHITECT:

By:_____Date:_____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CONTINUATION SHEET

Application and Certfication for Payment, containing
Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

Application No. : 0
Application Date :
To:
Architect's Project No.:

Invoice # :
Contract :

A	B	C	D	E	F	G		H	I
Item No.	Description of Work	Scheduled Value	Work Completed From Previous Application (D+E)	Work Completed This Period In Place	Materials Presently Stored (Not in D or E)	Total Completed and Stored To Date (D+E+F)	% (G / C)	Balance To Finish (C-G)	Retainage
					$ -	$ -	#DIV/0!	$0.00	$ -
					$ -	$ -	#DIV/0!	$0.00	$ -
					$ -	$ -	#DIV/0!	$0.00	$ -
					$ -	$ -	#DIV/0!	$0.00	$ -
					$ -	$ -	#DIV/0!	$0.00	$ -
						$ -	#DIV/0!	$0.00	$ -
	Page Totals	$ -	$ -	$ -	$ -	$ -	#DIV/0!	$ -	$ -

SAMPLE

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project / Bid Number:
Contract Date:
Final Contract Amount:

Owner:	**Contractor:**
Lake Metroparks 11211 Spear Road Concord, Ohio 44077	

☐ This Certificate of Substantial Completion **applies to all Work** under the Contract Documents.
☐ This Certificate of Substantial Completion **applies to the following specified parts of** the Contract Documents.
Documents:

The Work in which this Certificate applies has been inspected and reviewed by authorized representatives of the Owner, Contractor and Architect/Engineer and found to be substantially complete, and is also the date of commencement of applicable warranties required by the Contract Documents, except as attached. Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the owner can occupy or utilize the Work for intended use.

The date of **Substantial Completion** of the Project or portion thereof designated above is hereby established as

Date

☐ A "Punch-List" of items to be completed or corrected is listed below. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The Contractor shall complete or correct the Work within XX days from the above date of Substantial Completion.
"Punch-List" items:

Lake Metroparks will issue a Final Completion Certificate upon the acceptance of the Work or designated portion thereof as determined by the Owner, Contractor and Architect/Engineer as complete. Upon this time Final Payment will be authorized and Lake Metroparks will assume full possession.
OR
Lake Metroparks accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at (location) --, on (date) --.

Signature	Signature	Signature
Paul B. Palagyi	Name	Name
Lake Metroparks	Lake Metroparks	Company
Executive Director	Project Manager	Title
Date:	Date:	Date:

This certification does not constitute an acceptance of Work NOT in accordance with the Contract Documents nor is it a release of contractor's obligation to complete the work in accordance with the Contract Documents. Lake Metroparks and Contractor's legal and insurance counsel should determine and review insurance requirements and coverage.

SAMPLE

CONSENT OF SURETY TO FINAL PAYMENT

AIA Document G707

(Instructions on reverse side)

OWNER ☐
ARCHITECT ☐
CONTRACTOR ☐
SURETY ☐
OTHER ☐

TO OWNER:
(Name and address)

ARCHITECT'S PROJECT NO.:

CONTRACT FOR:

PROJECT:
(Name and address)

CONTRACT DATED:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

, SURETY,

on bond of
(Insert name and address of Contractor)

, CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to
(Insert name and address of Owner)

, OWNER,

as set forth in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

(Surety)

(Signature of authorized representative)

Attest:
(Seal):

(Printed name and title)

SAMPLE

CAUTION: You should sign an original AIA document that has this caution printed in red. An original assures that changes will not be obscured as may occur when documents are reproduced. See Instruction Sheet for Limited License for Reproduction of this document.

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AFFIDAVIT OF (SUB OR ORIGINAL) CONTRACTOR

_____, Ohio _____ , 20____

STATE OF OHIO, _____ COUNTY, ss:

_____ being first duly sworn says that he is

_____ of _____

the (Sub/Original) Contractor having a contract with LAKE METROPARKS, the OWNER for

_____

Situated on or around or in front of the following described property:

_____ whereof

LAKE METROPARKS was the OWNER.

Affiant further says that the following shows the names of every sub-contractor in the employ of said

_____

giving the amount, if any, which is due, or to become due, to them, or any of them, for work done or machinery, material or fuel furnished to date hereof, under said contracts.
NOTE: This statement must be accompanied by a similar sworn statement signed by each of the sub-contractors listed below.

SUB-CONTRACTORS

Name	Trade	Amount due or to become due for work and material furnished to date hereof

Said affiant further says that the following shows the names of every person furnishing machinery, material or

fuel to _____ giving them the amount, if any, which is due, or to become due, to them, for machinery, material or fuel furnished to date hereof, under said contracts.

MATERIAL MEN

Name	Trade	Amount due or to become due for work and material furnished to date hereof

SAMPLE

AFFIDAVIT OF (SUB OR ORIGINAL) CONTRACTOR

Said affiant further says that the following shows the names of every unpaid laborer in the employ of

_____ furnishing labor under said contract, giving the amount, if any, which is due, or to become due, for labor done to date hereof.

Name	Trade	Amount due or to become due for labor furnished to date hereof

That the amounts due or become due to said sub-contractors, material men and laborers, for work done, or

machinery, material or fuel furnished to date hereof, to _____
Is fully and correctly set forth opposite their names, respectfully, in the aforesaid statements, and further evidenced by certificates of every person furnishing machinery, material or fuel, hereto attached, and made a part hereof.

Affiant further says that _____ has not employed or purchased or procured machinery, material or fuel from, or sub-contracted with any person, firm or corporation, other than those mentioned above, and owes for no labor performed, or machinery or fuel furnished under said contracts, other than above set forth.

_____
Name / Title

Sworn to before me and subscribed in my presence, at _____, Ohio, this

_____ day of _____, 20____.

_____
Notary Public

_____ Ohio, _____, 20_____

The undersigned certifies that to date hereof that have furnished machinery, material or fuel as set out herein to

_____ for

_____

_____

Situated on or around or in front of the property described in the foregoing affidavit; that the nature of said machinery, material or fuel furnished, the date when they commenced furnishing the same and the amount now due or owing to each of them, is correctly stated and set opposite their respective names or that have been paid in full, if so acknowledged hereon.

Name	Machinery, materials or fuel and nature of the same	Commenced Furnishing	Amount due or to become due to date hereof.

SAMPLE

WAIVER OF LIEN

To All Whom It May Concern:

In consideration of the FINAL sum of _____ dollars,
Written words

$_____ , and other valuable consideration in hand paid, the receipt where of is hereby acknowledged, the undersigned does hereby waive, release and relinquish any and all liens or claims, right to lien or claim, for labor or materials, or both, furnished to date hereof, for premises known and described as follows:

Lake Metroparks Project: _____

Project Address: _____

_____
Contractor/Sub-Contractor Name

_____
Trade

Witness the hand and seal given this _____ day of _____, 20_____,

City of _____ County of _____ State of _____.

_____
Address

_____
Authorized Agents' Name (print)

_____
Signature of Authorized Agent

State of Ohio County of _____

Subscribed and sworn to before me by _____

This _____ day of _____, 20_____.

Notary Public _____

My commission expires _____.

(seal)

SAMPLE

AFFIDAVIT OF PREVAILING WAGES

I, _____, of

(Print Name)

_____

_____

_____

(Company name & address)

do hereby certify that the wages paid to all employees for the full number of hours worked in connection with the Contract to the Improvement, Repair and Construction of:

_____

(Project and Location)

during the following period, from _____ to _____ is in accordance with the prevailing wage prescribed by the contract document.

I further certify that no rebates of deductions for any wages due any person have been directly or indirectly made other than those provided by law.

_____

Name (print)

_____

Signature of Officer or Agent

Sworn to and subscribed in my presence this _____ day of _____, 20___.

_____

(Notary Public)

The above affidavit must be executed and sworn to by the officer or agent of the Contractor or Subcontractor who supervises the payment of employees, before the Board will release the surety and/or make a final payment due under the terms of the Contract.

SAMPLE

Schedule "A"
List of Drawing Index

Drawing Number & Title

Cover Sheet	CS
Partial Existing/Demolition Floor & Ceiling Plan	AD100
Partial Floor & Ceiling Plan	A100
Restroom Interior Elevations, Section & Details	A200
Interior Elevations/Section & Details	
Door Schedule – Details & Sections	
HVAC Legends, Symbols and Abbreviations	M000
HVAC Specifications	M001
Partial Floor Plan – HVAC	M100
HVAC Details	M200
Plumbing Legends, Symbols and Abbreviations	P000
Plumbing Specifications	P001
Partial Floor Plan – Plumbing	P100
Plumbing Details and Isometric	P200
Partial Floor Plan – Electrical Demolition, Power & Systems, and Lighting	E101
Electrical Schedules, General Notes, Wiring Diagram	E201
Electrical Specifications	E202

PROJECT MANUAL

For The

LAKE METROPARKS –
ERIE SHORES RESTROOM RENVOATIONS

October 2026

OWNER:

Lake Metroparks
1121 Spear Road
Concord Township, Ohio 44077

ARCHITECT:

ThenDesign Architecture Ltd.
4230 River Street
Willoughby, Ohio 44094
(440) 269-2266

Job No. 26060

TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION
SECTION 017839 - PROJECT RECORD DOCUMENTS

DIVISION 02 - EXISTING CONDITIONS

SECTION 024119 – SELECTIVE STRUCTURE DEMOLITION

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

SECTION 061053 - MISCELLANEOUS WOOD CARPENTRY
SECTION 061600 – SHEATHING
SECTION 062023 - INTERIOR FINISH CARPENTRY

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION 079200 - JOINT SEALANTS

DIVISION 08 - OPENINGS

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

DIVISION 09 - FINISHES

SECTION 092900 - GYPSUM BOARD
SECTION 095113 – ACOUSTICAL PANEL CEILINGS
SECTION 096513 - RESILIENT BASE AND ACCESSORIES
SECTION 096723 – RESINOUS FLOORING
SECTION 097720 – DECORATIVE FIBERGLASS REINFORCED WALL PANELS
SECTION 099123 - INTERIOR PAINTING

DIVISION 10 - SPECIALTIES

SECTION 102113 - PLASTIC TOILET COMPARTMENTS
SECTION 102800 – TOILET, BATH, AND LAUNDRY ACCESSORIES

DIVISION 12 – FURNISHINGS

SECTION - 123216 MANUFACTUERED PLASTIC LAMINATE FACED CASEWORK
SECTION - 123661.16 SOLID SURFACING COUNTERTOPS

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.

B. Related Requirements:

1. Section 024119 "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.

1.3 INFORMATIONAL SUBMITTALS

A. Digital Photographs: Submit image files within three days of taking photographs.

1. Digital Camera: Minimum sensor resolution of 8 megapixels.
2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name of Contractor.
c. Date photograph was taken.

1.4 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.

C. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site, including existing items to remain during construction, from different vantage points, as directed by Architect.

END OF SECTION 01322

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record specifications.
3. Record Product Data.
4. Record Shop Drawings.
5. Miscellaneous record submittals.

B. Related Requirements:

1. Section 017300 "Execution" for final property survey.
2. Section 017700 "Closeout Procedures" for general closeout procedures.
3. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit copies of Record Drawings as follows:

a. Initial Submittal:

1) Submit PDF electronic files of scanned record prints.
2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:

1) Submit PDF electronic files of scanned record prints.
2) Include each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and Contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.

D. Record Shop Drawings: Submit annotated PDF electronic files and directories of each submittal.

E. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an acceptable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.
    e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order or other Change Directive.
    k. Changes made following Architect's written orders.
    l. Details not on the original Contract Drawings.
    m. Field records for variable and concealed conditions.
    n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

4. Do not permanently conceal any work until required information has been recorded.
5. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
6. Mark important additional information that was either shown schematically or omitted from original Drawings.
7. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, RFI's, and similar identification, where applicable.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Identification: As follows:

a. Project name.
b. Date.
c. Designation "PROJECT RECORD DRAWINGS."
d. Name of Architect and Construction Manager.
e. Name of Contractor.

1.5 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

B. Format: Submit record specifications as annotated PDF electronic file, scanned PDF electronic file(s) of marked-up paper copy of Specifications.

1.6 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

C. Format: Submit Record Product Data as annotated PDF electronic file, scanned PDF electronic file(s) of marked-up paper copy of Product Data.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.7 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file, scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.8 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's and Construction Manager's reference during normal working hours.

END OF SECTION 017839

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.

B. Related Sections include the following:

1. Division 01 Section "Temporary Protection and Facilities" for temporary construction and environmental-protection measures for selective demolition operations.
2. Division 01 Section "Cutting and Patching" for cutting and patching procedures.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 SUBMITTALS

A. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Comply with Division 01 Section "Photographic Documentation." Submit before Work begins.

1.5 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

1.6 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

1. Comply with requirements specified in Division 01 Section "Summary."

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

1. Comply with requirements specified in Division 01 Section "Photographic Documentation."
2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies.
2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

    a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

3.3 PREPARATION

A. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 01 Section "Temporary Protection and Facilities."

B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.

B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Store items in a secure area until turned over to Owner.
3. Protect items from damage until tuned over to Owner.

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.

C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.

1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.

F. Roofing: Remove no more existing roofing than can be covered in one day by new roofing and so that building interior remains watertight and weathertight. Refer to Drawings for new roofing requirements.

1. Remove existing roof membrane, flashings, copings, and roof accessories.
2. Remove existing roofing system down to substrate.

G. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

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. Rooftop equipment bases and support curbs.
2. Wood blocking and nailers.

B. Related Sections include the following:

1. Division 06 Section "Interior Architectural Woodwork" for nonstructural carpentry items exposed to view and not specified in another Section.

1.3 DEFINITIONS

A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. WCLIB: West Coast Lumber Inspection Bureau.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawl spaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content of any species.

C. For concealed boards, provide lumber with 19 percent maximum moisture content andthe following species and grades:

D. For blocking not used for attachment of other construction Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.4 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1 .

G. Bolts: Steel bolts complying with ASTM A 307, Grade A ; with ASTM A 563 hex nuts and, where indicated, flat washers.

H. 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 .

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Do not splice structural members between supports, unless otherwise indicated.

D. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

E. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

G. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
3. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in ICBO's Uniform Building Code.
4. Table 2305.2, "Fastening Schedule," in BOCA's BOCA National Building Code.
5. Table 2306.1, "Fastening Schedule," in SBCCI's Standard Building Code.
6. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
7. Table 602.3(1), "Fastener Schedule for Structural Members," and Table 602.3(2), "Alternate Attachments," in ICC's International One- and Two-Family Dwelling Code.

H. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

END OF SECTION 061053

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Wall sheathing.
2. Sheathing joint and penetration treatment.

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for plywood backing panels.
2. Section 072500 "Weather Barriers" for water-resistive barrier applied over wall sheathing.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Include physical properties of treated materials.
3. For fire-retardant treatments, include physical properties of treated plywood both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5516.
4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.4 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For following products, from ICC-ES:
1. Fire-retardant-treated plywood.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For assemblies with fire-resistance ratings, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory."

2.2 WOOD PANEL PRODUCTS

A. Plywood: Either DOC PS 1 or DOC PS 2 unless otherwise indicated.

B. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.

C. Factory mark panels to indicate compliance with applicable standard.

2.3 FIRE-RETARDANT-TREATED PLYWOOD

A. General: Where used as blocking, backing, fascia boards, where concealed, or where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.

1. Use treatment that does not promote corrosion of metal fasteners.
2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
4. Design Value Adjustment Factors: Treated lumber plywood shall be tested according ASTM D 5516 and design value adjustment factors shall be calculated according to ASTM D 6305. Span ratings after treatment shall be not less than span ratings specified. For roof sheathing and where high-temperature fire-retardant treatment is indicated, span ratings for temperatures up to 170 deg F (76 deg C) shall be not less than span ratings specified.

C. Kiln-dry material after treatment to a maximum moisture content of 15 percent. Do not use material that is warped or does not comply with requirements for untreated material.

D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.

E. Application: Treat all plywood unless otherwise indicated.

2.4 WALL SHEATHING

A. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. CertainTeed Corporation; GlasRoc.
   b. G-P Gypsum Corporation; Dens-Glass Gold.
   c. National Gypsum Company; Gold Bond e(2)XP.
   d. United States Gypsum Co.; Securock.

2. Type and Thickness: Type X, 5/8 inch (15.9 mm) thick.
3. Size: 48 by 96 inches (1219 by 2438 mm) for vertical installation.

2.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening Wood Structural Panels to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

1. For wall and roof sheathing panels, provide screws with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.

F. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.

1. For steel framing less than 0.0329 inch (0.835 mm) thick, use screws that comply with ASTM C 1002.
2. For steel framing from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick, use screws that comply with ASTM C 954.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.

B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.

C. Securely attach to substrate by fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."

D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.

E. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 WOOD STRUCTURAL PANEL INSTALLATION

A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.

B. Fastening Methods: Fasten panels as indicated below:

1. Wall and Roof Sheathing:

a. Nail to wood framing.
b. Screw to cold-formed metal framing.
c. Space panels 1/8 inch (3 mm) apart at edges and ends.

3.3 GYPSUM SHEATHING INSTALLATION

A. Comply with GA-253 and with manufacturer's written instructions.

1. Fasten gypsum sheathing to wood framing with nails or screws.
2. Fasten gypsum sheathing to cold-formed metal framing with screws.
3. Install boards with a 3/8-inch (9.5-mm) gap where non-load-bearing construction abuts structural elements.
4. Install boards with a 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.

B. Apply fasteners so heads bear tightly against face of sheathing, but do not cut into facing.

C. Horizontal Installation: Install sheathing with V-grooved edge down and tongue edge up. Interlock tongue with groove to bring long edges in contact with edges of adjacent boards without forcing. Abut ends of boards over centers of studs, and stagger end joints of adjacent boards not less than one stud spacing. Attach boards at perimeter and within field of board to each steel stud.

1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of boards.

D. Vertical Installation: Install board vertical edges centered over studs. Abut ends and edges of each board with those of adjacent boards. Attach boards at perimeter and within field of board to each stud.

1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of boards.

END OF SECTION 061600

SECTION 062023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Shelving and clothes rods.
2. Shop finishing of interior woodwork.

B. Related Requirements

1. Division 06 "Rough Carpentry" for furring, blocking and other carpentry work not exposed to view.

1.3 DEFINITIONS

A. MDF: Medium-density fiberboard.

B. MDO: Plywood with a medium-density overlay on the face.

C. PVC: Polyvinyl chloride.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.

1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.
2. Include data for fire-retardant treatment, manufacturer and certification by treating plant that treated materials comply with requirements.
3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project Site to levels specified.
4. Include copies of warranties from chemical-treatment manufacturers for each type of treatment.

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

1. Show details full size.
2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
3. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, and other items installed in architectural woodwork.

C. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.

D. Samples for Verification:

1. For each species and cut of lumber and panel products with non-factory-applied finish, with 1/2 of exposed surface finished, 50 sq.in. for lumber and 8 by 10 inches for panels.
2. For each finish system and color of lumber and panel products with factory-applied-finish, 50 sq.in. for lumber and 8 by 10 inches for panels.

1.5 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For fire-retardant-treated wood, from ICC-ES.

B. Sample Warranty: For manufacturer's warranty.

C. Woodwork Quality Standard Compliance Certificates: AWI Quality Certificate Project certifications.

D. Qualification Data: For Installer.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Certified participant in AWI's Quality Certification Program.

B. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.

C. Fabricator Qualifications: A firm experienced in producing architectural woodwork similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

E. Fire-Test-Response Characteristics: Where fire-retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

B. Deliver interior finish carpentry materials only when environmental conditions meet requirements specified for installation areas. If interior finish carpentry materials must be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet work in space is completed and nominally dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to discoloration, sagging, and irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

C. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.

1.9 PRODUCT COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Regional Materials: The following wood products shall be manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.

1. Interior trim.
2. Shelving and clothes rods.
3. Locker room benches.

B. Low Emitting Materials: Composite wood products shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Lumber: DOC PS 20 and the following grading rules:

1. NeLMA: Northeastern Lumber Manufacturer's Association, "Standard Grading Rules for Northeastern Lumber."
2. NHLA: National Hardwood Lumber Association, "Rules for the Measurement and Inspection of Hardwood & Cypress.

3. NGLA: National Lumber Grades Authority, "Standard Grading Rules for Canadian Lumber."
4. SPIB: The Southern Pine Inspection Bureau, "Standard Grading Rules for Southern Pine Lumber."
5. WCLIB: West Coast Lumber Inspection Bureau, Standard No. 17, "Grading Rules for West Coast Lumber."
6. WWPA: Western Wood Products Association, "Western Lumber Grading Rules."

D. Factory mark each piece of lumber with grade stamp of grading agency Indicating grade, species, moisture content at time of surfacing, and mill.

1. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.

E. Particleboard: ANSI A208.1, Grade M-2 and Grade M-2-Exterior Glue.

F. Melamine-Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M-2, finished on both faces with thermally fused, melamine-impregnated decorative paper and complying with NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

1. Color: Match Architect's samples.

2.2 FIRE-RETARDANT-TREATED MATERIALS

A. General: For applications indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction, and comply with testing requirements; testing by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent respectively.

C. For exposed items indicated to receive a stained or natural finish, use organic resin chemical formulations that do not contain colorants, and provide materials that do not have marks from spacer sticks on exposed face.

D. Do not sue material that does not comply with requirements for untreated material or is warped or discolored.

E. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.
2. For exposed plywood indicated to receive a stained or natural finish, mark back of each piece.

F. Application: All interior lumber and plywood.

2.3 INTERIOR TRIM

A. Hardwood Lumber Trim for Transparent Finish (Stain or Clear Finish as selected by Architect):

1. Species and Grade: White maple, clear; NHLA
2. Maximum Moisture Content: 9 percent.
3. Finger Jointing: Not allowed.
4. Gluing for Width: Use for lumber trim wider than 6 inches.
5. Veneer Material: Not allowed.
6. Face Surface: Surfaced (smooth).
7. Matching: Selected for compatible grain and color.
8. AWI Finish System: Catalyzed Polyurethane.
9. Staining: Color to Match Architect’s sample.
10. Wash Coat for Stained Finish: Apply wash-coat sealer to woodwork made from closed-grain wood before staining and finishing.
11. Sheen: Satin, 31-45 gloss units measured on 60-degree gloss meter per ASTM D 523.

2.4 SHELVING AND CLOTHES RODS

A. Closet and Utility Shelving: Made from the following material, 3/4 inch thick:

1. Particleboard with solid-wood front edge.
2. MDF with solid-wood front edge.
3. Melamine-faced particleboard with applied-PVC front edge.

B. Shelf Brackets with Rod Support: BHMA A156.16, B04051; prime-painted formed steel.

C. Shelf Brackets without Rod Support: BHMA A156.16, B04041; prime-painted formed steel.

D. Standards for Adjustable Shelf Brackets: BHMA A156.9, B04102; powder-coat-finished steel.

E. Adjustable Shelf Brackets: BHMA A156.9, B04112; powder-coat-finished steel.

F. Standards for Adjustable Shelf Supports: BHMA A156.9, B04071; powder-coat-finished steel.

G. Adjustable Shelf Supports: BHMA A156.9, B04081 or B04091; powder-coat-finished steel.

H. Clothes Rods: 1-5/16-inch- diameter, chrome-plated-steel tubes.

I. Rod Flanges: Chrome-plated steel.

2.5 HARDWARE AND ACCESSORIES

A. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
2. Satin Stainless Steel: BHMA 630.

B. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.6 MISCELLANEOUS MATERIALS

A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

B. Low-Emitting Materials: Adhesives shall comply with testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

C. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

1. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

D. Multipurpose Construction Adhesive: Formulation, complying with ASTM D 3498, that is recommended for indicated use by adhesive manufacturer.

1. Adhesives shall have a VOC content of 70 g/L or less.

2.7 Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

A. Back out or kerf backs of the following members except those with ends exposed in finished work:

1. Interior standing and running trim except show and crown molds.

B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours.

3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, too small to fabricate with proper jointing arrangements, or with defective surfaces, sizes, or patterns.

B. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
   1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
   2. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
   3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
   4. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

3.4 STANDING AND RUNNING TRIM INSTALLATION

A. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available.

   1. Do not use pieces less than 24 inches long, except where necessary.
   2. Stagger joints in adjacent and related standing and running trim.
   3. Miter at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.
   4. Use scarf joints for end-to-end joints.
   5. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.

6. Match color and grain pattern of trim for transparent finish (stain or clear finish) across joints.
7. Install trim after gypsum-board joint finishing operations are completed.
8. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting.
9. Fasten to prevent movement or warping.
10. Countersink fastener heads on exposed carpentry work and fill holes.

3.5 SHELVING AND CLOTHES ROD INSTALLATION

A. Cut shelf cleats at ends of shelves about 1/2 inch less than width of shelves and sand exposed ends smooth.

1. Install shelf cleats by fastening to framing or backing with finish nails or trim screws, set below face and filled.
2. Space fasteners not more than 16 inches o.c. Use two fasteners at each framing member or fastener location for cleats 4 inches nominal in width and wider.
3. Apply a bead of multipurpose construction adhesive to back of shelf cleats before installing.
4. Remove adhesive that is squeezed out after fastening shelf cleats in place.

B. Install shelf brackets according to manufacturer's written instructions, spaced not more than 32 inches o.c. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.

C. Install standards for adjustable shelf supports according to manufacturer's written instructions. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors. Space fasteners not more than 12 inches o.c.

D. Install standards for adjustable shelf brackets according to manufacturer's written instructions, spaced not more than 36 inches o.c. and within 6 inches of ends of shelves. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.

E. Cut shelves to neatly fit openings with only enough gap to allow shelves to be removed and reinstalled.

1. Install shelves, fully seated on cleats, brackets, and supports.
2. Fasten shelves to cleats with finish nails or trim screws, set flush.
3. Fasten shelves to brackets to comply with bracket manufacturer's written instructions.

F. Install rod flanges for rods as indicated.

1. Fasten to shelf cleats, framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.
2. Install rods in rod flanges.

3.6 ADJUSTING

A. Replace interior finish carpentry that is damaged or does not comply with requirements. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

3.7 CLEANING

A. Clean interior finish carpentry on exposed and semi-exposed surfaces. Restore damaged or soiled areas and touch up factory-applied finishes, if any.

3.8 PROTECTION

A. Protect all finished products from other trades, dust, and debris until Substantial Completion.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 062023

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
4. Acoustical joint sealants.

B. Related Sections:

1. Division 04 Section "Unit Masonry" for masonry control and expansion joint fillers and gaskets.
2. Division 07 Section "Fire-Resistive Joint Systems" for sealing joints in fire-resistance-rated construction.
3. Division 08 Section "Glazing" for glazing sealants.
4. Division 09 Section "Gypsum Board" for sealing perimeter joints.

1.3 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Qualification Data: For qualified Installer.

D. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

E. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

G. Warranties: Sample of special warranties.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

1.5 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.6 WARRANTY

A. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

D. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

E. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

F. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Dow Corning Corporation; 790.
b. GE Advanced Materials - Silicones; SilPruf LM SCS2700.
c. Pecora Corporation; 890.
d. Tremco Incorporated; Spectrem 1.

2.3 URETHANE JOINT SEALANTS

A. Multicomponent, Nonsag, Urethane Joint Sealant: ASTM C 920, Type M, Grade NS, Class 50, for Use NT.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Pecora Corporation; Dynatrol II.
b. Polymeric Systems, Inc.; PSI-270.
c. Tremco Incorporated; Dymeric 240.

2.4 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
a. Bostik, Inc.; Chem-Calk 600.
b. Pecora Corporation; AC-20+.
c. Tremco Incorporated; Tremflex 834.

2.5 ACOUSTICAL JOINT SEALANTS

A. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

2.6 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.7 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Masonry.

c. Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

a. Metal.
b. Glass.
c. Porcelain enamel.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.

5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

G. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations.

3.4 FIELD QUALITY CONTROL

A. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

   a. Joints between plant-precast architectural concrete units.
   b. Control and expansion joints in unit masonry.
   c. Joints between metal panels.
   d. Joints between different materials listed above.
   e. Perimeter joints between materials listed above and frames of doors, windows and louvers.

2. Silicone Joint Sealant: Single component, nonsag, neutral curing, Class 100/50.
3. Urethane Joint Sealant: Multicomponent, nonsag, Class 50.
4. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

   a. Control and expansion joints on exposed interior surfaces of exterior walls.
   b. Perimeter joints of exterior openings where indicated.

c. Tile control and expansion joints.
d. Vertical joints on exposed surfaces of interior unit masonry, concrete, walls, and partitions.
e. Joints on underside of plant-precast structural concrete planks.
f. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.

2. Joint Sealant: Latex.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors

C. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces

1. Joint Sealant Location:

a. Joints between plumbing fixtures and adjoining walls, floors, and counters.

2. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Joint-Sealant Application: Interior acoustical joints in vertical surfaces and horizontal nontraffic surfaces

1. Joint Location:

a. Acoustical joints where indicated.
b. Other joints as indicated.

2. Joint Sealant: Acoustical.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes hollow-metal work.

B. Related Requirements:

1. Section 087100 "Door Hardware" for door hardware for hollow-metal doors.

1.3 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.4 COORDINATION

A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, core descriptions, fire-resistance ratings, temperature-rise ratings, and finishes.

B. Shop Drawings: Include the following:

1. Elevations of each door type.
2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.

6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of moldings, removable stops, and glazing.
9. Details of conduit and preparations for power, signal, and control systems.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification:

1. For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.
2. For "Doors" and "Frames" subparagraphs below, prepare Samples approximately 12 by 12 inches to demonstrate compliance with requirements for quality of materials and construction:

a. Doors: Show vertical-edge, top, and bottom construction; core construction; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
b. Frames: Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow-metal panels and glazing if applicable.

E. Schedule: Provide a schedule of hollow-metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

1.6 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each type of hollow-metal door and frame assembly, for tests performed by a qualified testing agency.

B. Oversize Construction Certification: For assemblies required to be fire rated and exceeding limitations of labeled assemblies.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow-metal work palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.

1. Provide additional protection to prevent damage to factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow-metal work vertically under cover at Project site with head up. Place on minimum 4-inch- high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Amweld International, LLC.
2. Ceco Door; ASSA ABLOY.
3. Curries Company; ASSA ABLOY.
4. Steelcraft; an Ingersoll-Rand company.

B. Source Limitations: Obtain hollow-metal work from single source from single manufacturer.

2.2 REGULATORY REQUIREMENTS

A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings[and temperature-rise limits] indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

B. Fire-Rated, Borrowed-Lite Assemblies: Complying with NFPA 80 and listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.

2.3 INTERIOR DOORS AND FRAMES

A. Construct interior doors and frames to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3. At locations indicated in the Door and Frame Schedule.

1. Frames:

a. Construction: Full profile welded.

2.4 BORROWED LITES

A. Hollow-metal frames of uncoated steel sheet, minimum thickness of 0.053 inch.

B. Construction: Full profile welded.

2.5 FRAME ANCHORS

A. Jamb Anchors:

1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
3. Post-installed Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch- diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.

2.6 MATERIALS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

C. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

F. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.

G. Glazing: Comply with requirements in Section 088000 "Glazing."

H. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.7 FABRICATION

A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Hollow-Metal Doors:

1. Steel-Stiffened Door Cores: Provide minimum thickness 0.026 inch, steel vertical stiffeners of same material as face sheets extending full-door height, with vertical webs spaced not more than 6 inches apart. Spot weld to face sheets no more than 5 inches o.c. Fill spaces between stiffeners with glass- or mineral-fiber insulation.
2. Fire Door Cores: As required to provide fire-protection and temperature-rise ratings indicated.
3. Vertical Edges for Single-Acting Doors: Provide beveled or square edges at manufacturer's discretion.
4. Top Edge Closures: Close top edges of doors with inverted closures of same material as face sheets.
5. Bottom Edge Closures: Close bottom edges of doors with end closures or channels of same material as face sheets.
6. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.

C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Sidelite Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
4. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
5. Jamb Anchors: Provide number and spacing of anchors as follows:

    a. Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches o.c., to match coursing, and as follows:

1) Two anchors per jamb up to 60 inches high.
2) Three anchors per jamb from 60 to 90 inches high.
3) Four anchors per jamb from 90 to 120 inches high.
4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:

1) Three anchors per jamb up to 60 inches high.
2) Four anchors per jamb from 60 to 90 inches high.
3) Five anchors per jamb from 90 to 96 inches high.
4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.

c. Post-installed Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.

6. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.

a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

7. Terminated Stops: Terminate stops 6 inches above finish floor with a 45 -degree angle cut, and close open end of stop with steel sheet closure. Cover opening in extension of frame with welded-steel filler plate, with welds ground smooth and flush with frame.

D. Fabricate concealed stiffeners and edge channels from either cold- or hot-rolled steel sheet.

E. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce doors and frames to receive non-templated, mortised, and surface-mounted door hardware.
2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

F. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with mitered hairline joints.

1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.

4. Provide loose stops and moldings on inside of hollow-metal work.
5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.8 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

2.9 ACCESSORIES

A. Louvers: Provide louvers for interior doors, where indicated, which comply with SDI 111C, with blades or baffles formed of 0.020-inch- thick, cold-rolled steel sheet set into 0.032-inch- thick steel frame.

1. Sight-proof Louver: Stationary louvers constructed with inverted-V or inverted-Y blades.
2. Lightproof Louver: Stationary louvers constructed with baffles to prevent light from passing from one side to the other.
3. Fire-Rated Automatic Louvers: Louvers constructed with movable blades closed by actuating fusible link, and listed and labeled for use in fire-rated door assemblies of type and fire-resistance rating indicated by same qualified testing and inspecting agency that established fire-resistance rating of door assembly.

B. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.

C. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Drill and tap doors and frames to receive non-templated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

A. General: Install hollow-metal work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.

B. Hollow-Metal Frames: Install hollow-metal frames for doors, transoms, sidelites, borrowed lites, and other openings, of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

    a. At fire-rated openings, install frames according to NFPA 80.
    b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
    c. Install frames with removable stops located on secure side of opening.
    d. Install door silencers in frames before grouting.
    e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
    g. Field apply bituminous coating to backs of frames that will be filled with grout containing anti-freezing agents.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.

    a. Floor anchors may be set with power-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.

3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
5. Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.

6. In-Place Concrete or Masonry Construction: Secure frames in place with post-installed expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
7. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.
8. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:

    a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
    c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Steel Doors:

    a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
    b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
    c. At Bottom of Door: 3/4 inch plus or minus 1/32 inch.
    d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
3. Smoke-Control Doors: Install doors and gaskets according to NFPA 105.

D. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow-metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

E. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081113

SECTION 092900 - GYPSUM BOARD

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 gypsum board.

B. Related Sections include the following:

1. Division 05 Section "Cold-Formed Metal Framing" for load-bearing steel framing that supports gypsum board.
2. Division 06 Section "Miscellaneous Rough Carpentry" for wood framing and furring that supports gypsum board.
3. Division 07 Section "Fire-Resistive Joint Systems" for head-of-wall assemblies that incorporate gypsum board.
4. Division 09 Section "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board.
5. Division 09 Section "Tiling" for cementitious backer units installed as substrates for ceramic tile.
6. Division 09 painting Sections for primers applied to gypsum board surfaces.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch- long length for each trim accessory indicated. Include USG “Danish” radius edge bead.

1.4 QUALITY ASSURANCE

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

1.5 STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install interior products until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 PANELS, GENERAL

A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.2 INTERIOR GYPSUM BOARD

A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.

1. 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:

a. American Gypsum Co.
b. G-P Gypsum.
c. National Gypsum Company.
d. USG Corporation.

B. Type X:

1. Thickness: 5/8 inch .
2. Long Edges: Tapered.

C. Abuse-Resistant Type X: Manufactured to produce greater resistance to surface indentation, through-penetration (impact resistance), and abrasion than standard, regular-type and Type X gypsum board.

1. Core: 5/8 inch , Type X.
2. Long Edges: Tapered.

D. Acoustical Abuse Resistant Type X: Manufactured to produce greater resistance to surface indentation, through-penetration (impact resistance), and abrasion than standard, regular-type and Type X gypsum board, while reducing sound transmission.

1. Manufacturer (as listed below or an equivalent approved substitution):
   a. Certainteed Silent FX (basis of design)
   b. National Gypsum Soundbreak XP

2. Core: 5/8 inch , Acoustic Type X.
3. Long Edges: Tapered.

E. Cementitious Backer Units: ANSI A118.9 and ASTM C 1288 or ASTM C 1325, with manufacturer's standard edges.
1. Thickness: **5/8 inch**.
2. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.3 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Paper-faced galvanized steel sheet.
2. Shapes:

a. Cornerbead.
b. Bullnose bead.
c. LC-Bead: J-shaped; exposed long flange receives joint compound.
d. L-Bead: L-shaped; exposed long flange receives joint compound.
e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
f. Expansion (control) joint.
g. Curved-Edge Cornerbead: With notched or flexible flanges.
h. USG “Danish” bead.

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Wallboard: Paper.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.

2.5 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

C. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

D. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."

1. Provide sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.6 TEXTURE FINISHES

A. Primer: As recommended by textured finish manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.

2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Type X: Where required for fire-resistance-rated assembly at ceilings.
2. Abuse-Resistant Type X: Walls.
3. Acoustical Abuse-Resistant Type X (Alternate A5): Walls where indicated.
4. Cementitious Backer Units: Walls, behind tile.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.

3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners.
2. Bullnose Bead: Use at outside corners.
3. LC-Bead: Use at exposed panel edges.
4. L-Bead: Use where indicated.
5. U-Bead: Use where indicated.
6. Curved-Edge Cornerbead: Use at curved openings.

3.5 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints, rounded or beveled edges, and damaged surface areas.

C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

D. Gypsum Board Finish Levels: Finish panels to level 5 finish and according to ASTM C 840.

a. Primer and its application to surfaces are specified in other Division 09 Sections.

3.6 APPLYING TEXTURE FINISHES

A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.

B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.

C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written recommendations.

3.7 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes acoustical panels and exposed suspension systems for interior ceilings.

B. Related Requirements:

1. Section 095123 "Acoustical Tile Ceilings" for ceilings consisting of mineral-base acoustical tiles used with fully concealed suspension systems, stapling, or adhesive bonding.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site to be attended by the installer, the architect, and the construction manager to review the specifications, and detail the materials, the installation, the initial maintenance, and protection of the installed ceiling.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Product Test Reports: For each acoustical panel ceiling, for tests performed by a qualified testing agency.

C. Evaluation Reports: For each acoustical panel ceiling suspension system, from ICC-ES.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Units: Full-size panels equal to 2 percent of quantity installed for each panel type specified.

2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed for each type specified.
3. Hold-Down Clips: Equal to 2 percent of quantity installed.
4. Impact Clips: Equal to 2 percent of quantity installed.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Ceiling products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design seismic restraints for ceiling systems.

C. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Class A according to ASTM E1264.

2. Smoke-Developed Index: 450 or less.

D. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL or from the listings of another qualified testing agency.

2.3 ACOUSTICAL PANELS

A. Acoustical Panels: ACT-1

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Armstrong World Industries, Inc.; Cirrus #574 (24 by 24 inch) and #533 (24 by 48 inch) Square Lay-in Item #1714.
b. CertainTeed Corp.; Celotex Brand Fine Fissured High NRC #HHF-497 DP.
c. USG Interiors, Inc.; Subsidiary of USG Corporation; Eclipse ClimaPlus, Square Lay-in Item #76575.

2. Classification: Provide fire-resistance rated panels complying with ASTM E 1264 for type, form, and pattern as follows:

a. Type and Form: Type III, mineral base with painted finish; Form 2, water felted.
b. Pattern: CE (perforated, small holes and lightly textured).

3. Color: White.
4. LR: Not less than 0.85.
5. NRC: Not less than 0.70.
6. CAC: Not less than 35.
7. Edge/Joint Detail: Square.
8. Thickness: 3/4 inch.
9. Modular Size:24 by 48 inches and 24 by 24 inches, as indicated in Drawings.
Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21 (basis of design: Armstrong, Humiguard Plus).

2.4 METAL SUSPENSION SYSTEMS

A. Suspension system for ACT-1:

1. Products: Subject to compliance with requirements, provide one of the following:

a. Armstrong World Industries, Inc.; Prelude XL 15/16” Exposed Tee System.
b. CertainTeed Corporation.; 15/16” Classic System.

c. USG Interiors, Inc.; Donn DX Exposed 15/16” Face Suspension System

2. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, G30 (Z90) coating designation, with prefinished, 15/16-inch- (24-mm-) wide, aluminum caps on flanges.

a. Structural Classification: Intermediate-duty system.
b. End Condition of Cross Runners: Override stepped or butt-edge type.
c. Face Design: Flat, flush.
d. Face Finish: Painted white.

2.5 ACCESSORIES

A. Attachment Devices: Size for five times the design load indicated in ASTM C635/C635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E488/E488M or ASTM E1512 as applicable, conducted by a qualified testing and inspecting agency.

a. Type: Postinstalled expansion anchors.
b. Corrosion Protection, Carbon Steel: Components zinc plated according to ASTM B633, Class SC 1 (mild) service condition.
c. Corrosion Protection, Stainless Steel: Components complying with ASTM F593 and ASTM F594, Group 1 Alloy 304 or 316.
d. Corrosion Protection, Nickel-Copper Alloy: Components fabricated from nickel-copper-alloy rods complying with ASTM B164 for UNS No. N04400 alloy.

2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E1190, conducted by a qualified testing and inspecting agency.

B. Wire Hangers, Braces, and Ties: Provide wires as follows:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper.
2. Stainless-Steel Wire: ASTM A580/A580M, Type 304, nonmagnetic.
3. Nickel-Copper-Alloy Wire: ASTM B164, nickel-copper-alloy UNS No. N04400.
4. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C635/C635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.106-inch- diameter wire.

C. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.

D. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.

E. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch- thick, galvanized-steel sheet complying with ASTM A653/A653M, G90 coating designation; with bolted connections and 5/16-inch- diameter bolts.

F. Hold-Down Clips: Manufacturer's standard hold-down.

G. Impact Clips: Manufacturer's standard impact-clip system designed to absorb impact forces against acoustical panels.

H. Clean-Room Gasket System: Where indicated, provide manufacturer's standard system, including manufacturer's standard gasket and related adhesives, tapes, seals, and retention clips, designed to seal out foreign material from and maintain positive pressure in clean room.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.

B. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

A. Install acoustical panel ceilings according to ASTM C636/C636M and manufacturer's written instructions.

1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.

2. Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
8. Do not attach hangers to steel deck tabs.
9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
10. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.
3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide precise fit.

1. Arrange directionally patterned acoustical panels as follows:

a. Install panels with pattern running in one direction parallel to long axis of space or as indicated in drawings.

2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
3. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
4. For reveal-edged panels on suspension-system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension-system surfaces and panel faces flush with bottom face of runners.
5. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
6. Install impact clips in areas indicated; space according to panel manufacturer's written instructions unless otherwise indicated.

   a. Hold-Down Clips: Space 24 inches o.c. on all cross runners.

7. Protect lighting fixtures and air ducts according to requirements indicated for fire-resistance-rated assembly.

3.4 ERECTION TOLERANCES

A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet, non-cumulative.

B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

3.5 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.

B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Thermoset-rubber base.
2. Rubber stair accessories.
3. Rubber molding accessories.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 2 inches long.

1.3 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

1.4 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Coordinate mockups in this Section with mockups specified in other Sections.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

B. Installation Qualification: Contractors for floor covering installation should be experienced in managing commercial flooring projects and provide professional installers, qualified to install the various flooring materials specified. An installer is “qualified” if trained by a certified International Standards and Training Alliance resilient floor covering installer.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 55 deg F or more than 85 deg F.

1.6 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 65 degrees F or more than 85 degrees F, in spaces to receive resilient products during the following periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Fire-Test-Response Characteristics: For resilient base and accessories, as determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
2. ASTM E (Smoke Generation) Maximum Specific Optical Density of 450 or less.

C. Products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.2 THERMOSET-RUBBER BASE (RB)

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Flexco; Wallflowers Wall Base.
2. Johnsonite; A Tarkett Company; Baseworks Rubber Wall Base.
3. Mannington Commercial: BurkeBase Type TS Wall Base.

4. Mondo Contract Flooring; Wall Base.
5. Nora Systems, Inc.; Nora Wall Base
6. Roppe Corporation, U.S.A.; Pinnacle Wall Base.

B. Product Standard:ASTM F 1861, Type TS (rubber, thermoset).

1. Group: I (solid, homogeneous).
2. Style: B, Cove.
3. Thickness: 0.125 inch.
4. Height: 4 inches.
5. Lengths: Coils in manufacturer's standard length, minimum 100 feet.
6. Outside Corners: Job formed.
7. Inside Corners: Job formed.
8. Colors: As selected by Architect from full range of industry colors.

2.3 RUBBER STAIR ACCESSORIES (RTR)

A. Manufacturers

1. Flexco, Corporation; Heavy Duty Radial II One-Piece Tread with Riser, with and without Visually Imparied Strip.
2. Johnsonite, A Tarkett Company; Rubber Tread with Integrated Riser VIRTR.
3. Mannington Commercial; ColorScape One-Step Stair Treads with and without Visually Impaired Strip.
4. Nora Systems, Inc.; Norament Stair Tread with and without Visually Impaired Strip.
5. Roppe Corporation, U.S. A.; VAntage Profile One-Piece Tread and Riser with and without Visually Impaired Strip.

B. Stair Treads: ASTM F 2169.

1. Type: TS (rubber, vulcanized thermoset).
2. Class: 2 (pattern: as selected by architect from manufacturer's full range of patterns and textures.)
3. Group: 2 (with contrasting color for the visually impaired.)
4. Nosing Style: Square, adjustable to cover angles between 60 and 90 degrees.
5. Nosing Height: 1-1/2 - 2 inches.
6. Thickness: 1/8 inch and tapered to the back edge.
7. Size: Lengths and depths to fit each stair tread in one piece.
8. Integral Risers: Smooth, flat; in height that fully covers substrate.

C. Landing Tile: Matching treads; produced by same manufacturer as treads and recommended by manufacturer for installation with treads.

D. Locations: Provide rubber stair accessories in areas as indicated.

E. Colors: As selected by Architect from full range of industry colors (minimum 21).

2.4 VINYL MOLDING ACCESSORIES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Flexco, Corporation; Flooring Accessories.
2. Johnsonite; A Tarkett Company; Specialty Flooring Finishing Accessories.
3. Mannington Commercial; Vinyl Accessories.
4. Roppe Corporation, U.S.A.; Vinyl Accessorries.

B. Description: Vinyl cap for cover resilient flooring, carpet edge for glue-down applications, nosing for carpet, nosing for resilient flooring, reducer strip for resilient flooring, joiner for tile and carpet, and transition strips.

C. Profile and Dimensions: As indicated.

D. Locations: Provide vinyl molding accessories in areas indicated.

E. Colors: As selected by Architect from full range of industry colors.

2.5 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

1. Adhesives shall have a VOC content of 50 g/L or less.

C. Stair-Tread Nose Filler: Two-part epoxy compound recommended by resilient stair-tread manufacturer to fill nosing substrates that do not conform to tread contours.

D. Metal Edge Strips: of width shown, nominal 2 inches wide, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
4. Moisture Testing: Perform tests so that each test area does not exceed 1000 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

    a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
    b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient products until materials are the same temperature as space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Use only manufacturer's recommended adhesive for installation.

C. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

D. Install resilient base in lengths as long as practical without gaps at seams and with tops of

adjacent pieces aligned.

E. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

F. Do not stretch resilient base during installation.

G. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

H. Preformed Corners: Install preformed corners before installing straight pieces.

I. Job-Formed Corners:

1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 6 inches in length.

    a. Form without producing discoloration (whitening) at bends.

2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 6 inches in length.
3. Mitered corners are not acceptable.

3.4 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Stair Accessories:

1. Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
2. Use only manufacturer's recommended adhesive for installation.
3. Tightly adhere to substrates throughout length of each piece.
4. For treads installed as separate, equal-length units, install to produce a flush joint between units.

C. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.

B. Perform the following operations immediately after completing resilient-product installation:

1. Remove adhesive and other blemishes from surfaces. Follow manufacturer's instructions to avoid damage to flooring finish and accessory materials' finish.
2. Sweep and vacuum horizontal surfaces thoroughly.
3. Damp-mop horizontal surfaces to remove marks and soil.

C. Initial Maintenance for Rubber Tread and Riser Units: Remove soil, visible adhesive, and surface blemishes from floor tile surfaces before performing manufacturer's recommended maintenance.

1. Use commercially available product recommended by flooring manufacturer.
2. Remove silicone finish with a diluted pH neutral cleaner/degreaser using flooring and solution manufacturers' accepted method.

D. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

E. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 096723 - RESINOUS FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Epoxy flooring system for Restrooms.

B. Related Sections:

1. Section 071800 "Traffic Coatings" for traffic-bearing, elastomeric flooring systems.

2. Section 079200 "Joint Sealants" for sealants installed at joints in urethane and resinous flooring systems.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include manufacturer's technical data, application instructions, and recommendations for each resinous flooring component required.

B. Samples for Initial Selection: For each type of exposed finish required.

1.5 INFORMATIONAL SUBMITTALS

A. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.

B. Material Certificates: For each resinous flooring component, from manufacturer.

C. Material Test Reports: For each resinous flooring system, by a qualified testing agency.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For resinous flooring to include in maintenance manuals.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

B. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.

C. Manufacturer Field Technical Service Representatives: Resinous flooring manufacture shall retain the services of Field Technical Service Representatives who are trained specifically on installing the system to be used on the project.

1. Field Technical Services Representatives shall be employed by the system manufacture to assist in the quality assurance and quality control process of the installation and shall be available to perform field problem solving issues with the installer.

D. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Apply full-thickness mockups on 96-inch- square floor area selected by Architect.

    a. Include 96-inch length of integral cove base with inside and outside corner.

2. Simulate finished lighting conditions for Architect's review of mockups.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.

1.9 FIELD CONDITIONS

A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.

B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.

C. Close spaces to traffic during resinous flooring application and for 24 hours after application unless manufacturer recommends a longer period.

1.10 WARRANTY

A. Construction Manager's Subcontractor Agreement includes the following and applies to this section: All Subcontractors are responsible for the Owner's special warranty period requirements. The standard one-year warranty on materials and workmanship is one year from the date of owner occupancy. That one-year warranty shall include parts/material and labor. For other extended product/equipment/material warranties, noted in the Specifications, that warranty period as noted will commence on the date of owner occupancy. All Subcontractors are required to ensure those extended warranties meet the specified period from owner occupancy date and include all associated costs in their bid. There will be no warranty exclusions accepted. These warranty provisions supersede lesser warranty periods listed in any specification section. All References in the Specifications to Warranty Period to begin at "Substantial Completion" are superseded by the above.

B. In addition, in the Special Condition section the CMR contract indicates final payment will not be made until all warranties, including additional product specific warranties, are received and accepted by Hammond and the Owner.

PART 2 - PRODUCTS

2.1 PERORMANCE REQUIREMENTS

A. Flammability: Self-extinguishing according to ASTM D 635.

2.2 MANUFACTURERS

A. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, from single source from single manufacturer. Obtain secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from manufacturer recommended in writing by manufacturer of primary materials.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carboline.
2. Dur-A-Flex, Inc.
3. PPG Industries, Inc.
4. Sherwin-Williams Company; General Polymers.
5. Stonhard.

2.3 MATERIALS

A. VOC Content of Liquid-Applied Flooring Components: Not more than 100 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

B. Low-Emitting Materials: Flooring system shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.4 RESINOUS FLOORING: Restrooms

A. Resinous Flooring System: Abrasion-, impact-, and chemical-resistant, aggregate-filled, and resin-based monolithic floor surfacing designed to produce a seamless floor and integral cove base.

B. Must comply with double broadcasting build. Liquid rich, slurry type systems will not be accepted.

C. Product System: Subject to compliance with requirements, provide:

1. BASIS OF DESIGN: Stonhard, Inc.; Stonshield SLT

C. Characteristics:

1. Color and Pattern: As selected by Architect from manufacturer's full range.
2. Slip Resistance: Provide slip resistant finish. Medium Texture
3. Integral Cove Base: Provide 6 inch integral base to match flooring system.
4. Overall System Thickness: nominal 2mm

D. System Components: Manufacturer's standard components that are compatible with each other and as follows:

1. Primer:
   a. Material design basis: Stonhard Standard Primer
   b. Resin: Epoxy
   c. Formulation Description: high percent solids
   d. Application Method: squeegee and roller.
   e. Number of Coats: (1) one.

2. Broadcast media
   a. Material Basis: Stonshield quartz aggregate.
   b. Type: pigmented.
   c. c. Finish: standard.
   d. d. Number of Coats: one.
   e. e. Pattern: Tweed

3. Undercoat
   a. Material Basis: Stonshield undercoat.
   b. Resin: Epoxy

c. Formulation Description: (2) two-component, 100% solids, UV Stable.
d. Type: Clear.
e. Finish: Gloss.
f. Number of Coats: one.

4. Broadcast media
   a. Material Basis: Stonshield quartz aggregate.
   b. Type: pigmented.
   c. c. Finish: standard.
   d. d. Number of Coats: one.
   e. e. Pattern: Tweed

5. Sealer
   a. Material: Stonkote CE4.
   b. Resin: Epoxy
   c. Formulation Description: (2) two-component, 100% solids, UV Stable. Stonshield SLT
   d. Type: Clear.
   e. Finish: Gloss.
   f. Number of Coats: one.
   g. Texture level: Standard or medium.

E. System Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to test methods indicated:

1. Compressive Strength: 6,000 psi minimum according to ASTM C 579.
2. Tensile Strength: 1,500 psi minimum according to ASTM C 307.
3. Flexural Strength: 4,000 psi minimum according to ASTM C 580.
4. Flexural Modulus of Elasticity: 1.1 x 10^6 psi per ASTM C 580.
5. Water Absorption: <1% per ASTM C 413.
6. Impact Resistance: No chipping, cracking, or delamination and not more than 1/16-inch permanent indentation according to MIL-D-3134J.
7. Resistance to Elevated Temperature: No slip or flow of more than 1/16 inch according to MIL-D-3134J.
8. Abrasion Resistance: 20-30 mg maximum weight loss per ASTM D 4060.
9. Hardness: 70/65, Shore D according to ASTM D 2240.
10. Flammability: Class 1 per ASTM E-648
11. Bond Strength: 300 psi or 100 percent concrete failure per ACI 503R.
12. Cure Rate @ 77o F/25o C: 12 hours foot traffic, 24 hours normal operations

2.5 WATERPROOFING/REINFORCING MEMBRANE

A. Waterproofing/Reinforcing Membrane: Type recommended in writing by resinous flooring manufacturer to inhibit substrate cracks from reflecting through resinous flooring.

1. Products: Provide products by the same manufacturer as the resinous flooring system.

2. Formulation Description: High Solids, (2) coats.

a. Sand broadcast to rejection or provide fiberglass scrim embedded in reinforcing membrane.

2.6 ACCESSORY MATERIALS

A. Patching, Leveling and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.

B. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated. Allowances should be included for Stonflex MP7 joint fill material, and CT5 concrete crack treatment.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry substrate for resinous flooring application.

B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.

1. Roughen concrete substrates as follows:

a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
b. Comply with ASTM C 811 requirements unless manufacturer's written instructions are more stringent.

2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written instructions.
3. Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.

a. Anhydrous Calcium Chloride Test: ASTM F 1869. Proceed with application of resinous flooring only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. of slab area in 24 hours.
b. Plastic Sheet Test: ASTM D 4263. Proceed with application only after testing indicates absence of moisture in substrates.

c. Relative Humidity Test: Use in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

4. Alkalinity and Adhesion Testing: Verify that concrete substrates have pH within acceptable range. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.

C. Patching and Filling: Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.

1. Control Joint Treatment: Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written instructions.

D. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.

3.2 APPLICATION

A. Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.

1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
3. Expansion and Isolation Joint Treatment: At substrate expansion and isolation joints, comply with resinous flooring manufacturer's written instructions.

B. Primer: Apply primer over prepared substrate at manufacturer's recommended spreading rate.

C. Waterproofing Membrane: Apply waterproofing membrane where indicated on Drawings, in manufacturer's recommended thickness.

1. Apply waterproofing membrane to integral cove base substrates.

D. Reinforcing Membrane: Apply reinforcing membrane to substrate cracks.

E. Integral Cove Base: Apply cove base mix to wall surfaces before applying flooring. Apply according to manufacturer's written instructions and details, including those for taping, mixing, priming, troweling, sanding, and topcoating of cove base. Round internal and external corners.

1. Integral Cove Base: 6 inches high.

F. Troweled or Screeded Body Coats: Apply troweled or screeded body coats in thickness indicated for flooring system. Hand or power trowel and grout to fill voids. When body coats are cured, remove trowel marks and roughness using method recommended by manufacturer.

G. Grout Coat: Apply grout coat, of type recommended by resinous flooring manufacturer, to fill voids in surface of final body coat.

H. Topcoats: Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by manufacturer and to produce wearing surface indicated.

3.3 FIELD QUALITY CONTROL

A. Material Sampling: Owner may, at any time and any number of times during resinous flooring application, require material samples for testing for compliance with requirements.

1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's product data.
3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

3.4 CURING, PROTECTION & CLEANING

A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 18 hours.

B. Protect resinous flooring from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by resinous flooring manufacturer.

C. Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.

END OF SECTION 096723

SECTION 097720 - DECORATIVE FIBERGLASS REINFORCED WALL PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawing and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Prefinished fiberglass reinforced plastic wall panels.
2. Aluminum trim.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site

1. Review methods and procedures related to FRP installation including, but not limited to, the following:

a. Review installation procedures and installation locations.
b. Review flooring to wall transition and coordination with other work.

1.4 ACTION SUBMITTALS

A. Product Data: For each type, submit sufficient manufacturer's data to indicate compliance with these specifications, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

B. Shop Drawings: Submit elevations of each wall showing location of paneling and trim members with respect to all discontinuities in the wall elevation.

C. Samples: Submit manufacturer's standard color pattern selection samples representing manufacturer's full range of available colors and patterns,

a. Submit complete with specified applied finish.

2. For selected patterns show complete pattern repeat
3. Exposed molding and trim: provide samples of each type, finish, and color.

D. Manufacturers Material Safety Data Sheets for adhesives, sealants and other pertinent materials prior to their delivery to the site.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Environmental Certifications: Submit certificates for GREENGUARD Indoor Air Quality and Children & Schools Certification.

C. Warranty Information

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For FRP to include in maintenance manuals. Include the following:

1. Cleaning requirements in areas where the product is located, including restrooms. Include information on any cleaning solutions and practices that are detrimental to the lifespan of the product.

B. Warranty Documentation: Submit manufacturer's standard warranty.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Extra Stock Materials:

1. Deliver to Owner extra stock materials from the same production run as the products installed.
2. Quantity: Furnish quantity of FRP panels equal to 5% of amount installed.
3. Delivery, Storage and Protection:

    a. Comply with Owner's requirements for delivery, storage, and protection of extra stock materials.
    b. Package extra stock materials with protective covering and include labels clearly identifying product name and manufacturer.

1.8 QUALITY ASSURANCE

A. Conform to building code requirements for interior finish for smoke and flame spread requirements as tested in accordance with:

1. ASTM E 84 (Method of test for surface burning characteristics of building Materials)

    a. Wall Required Rating - Class A

B. Sanitary Standards: System components and finishes to comply with:

1. United States Department of Agriculture (USDA) requirements for food preparation facilities, incidental contact.
2. Food and Drug Administration (FDA) 1999 Food Code 6-101.11.

C. Source Limitations: Obtain all products from one source from a single Manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials factory packaged on strong pallets.

B. Store panels and trim lying flat, under cover and protected from the elements. Allow panels to acclimate to room temperature (range of 60 to 75°F) for 48 hours prior to installation.

1.10 PROJECT CONDITIONS

A. Environmental Limitations: Building is to be fully enclosed prior to installation with sufficient heat (70°F) and ventilation consistent with good working conditions for finish work.

B. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer.

1. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

1. Source Limitations: Obtain FRP panels from single source from single manufacturer. Basis of design: Marlite: Symmetrix Smart Seam FRP

B. Available Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Marlite
2. Nudo
3. Crane Composites, Inc.

C. Panels: fiberglass reinforced plastic and polyester resin panels, resistant to rot, corrosion, staining, denting, peeling, and splintering.

1. Panel Dimensions: 4'-0" Width by 8'-0" Height; manufacturer's standard nominal thickness
2. Fire Rating: Class A per ASTM D 5319
3. Scratch Resistance: Barcol Hardness of 55 per ASTM D 2583
4. Finish: Ceramic Tile Texture
5. Low Emitting Materials: Comply with testing and product requirements of California Department of Health Services standards for Volatile Organic Emissions.
6. Color and Texture/Finish: to be selected by Architect from manufacturer's full range.

D. Panel Properties: Comply with the following requirements.

1. Flexural Strength

a. 1.0 x 104 psi per ASTM D 790. (7.0 kilogram-force/square millimeter)

2. Flexural Modulus

a. 3.1 x 105 psi per ASTM D 790. (217.9 kilogram-force/square millimeter)

3. Tensile Strength

a. 7.0 x 103 psi per ASTM D 638. (4.9 kilogram-force/square millimeter)

4. Tensile Modulus

a. 1.6 x 105 psi per ASTM D 638. (112.5 kilogram-force/square millimeter)

5. Water Absorption

a. 0.72% per ASTM D 570

6. Izod Impact Strength of 72 ft. lbs./in ASTM D 256

E. Installation Accessories: Trim, Moldings, Rivets and Adhesives

1. Aluminum Trim and Molding: Heavy weight extruded aluminum

a. Trim and Moldings must create a water-tight seal.
b. Profiles: As indicated on Drawings.
c. Finish: As selected by Architect from Manufacturer's full range.

2. Polypropylene Trim and Molding: Extruded polypropylene

a. Trim and Moldings must create a water-tight seal.
b. Profiles: As indicated on Drawings.
c. Finish: As selected by Architect from Manufacturer's full range.

3. Rivets: Non-Staining Nylon Drive rivets

a. Match panel colors
b. Length to suit project conditions.

4. Adhesives & Sealant

a. Provide adhesives recommended by manufacturer for required substrates and emission requirements.
b. VOC content: Maximum 50 g/l
c. Panel Seam Sealant: provide silicone seam sealant as recommended by panel manufacturer for required substrates and environments.

1) Seam Sealant Color: Clear and/or Bright White

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean, and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.

1. Verify that stud spacing does not exceed 24" on-center.

B. Repair defects prior to installation.

1. Level wall surfaces to panel manufacturer's requirements. Remove protrusions and fill indentations.

3.2 INSTALLATION

A. Comply with manufacturer's recommended procedures and installation sequence.

B. Cut sheets to meet supports allowing 1/8" (3 mm) clearance for every 8 foot (2.4m) of panel.

1. Cut and drill with tipped saw blades or drill bits or cut with shears.
2. Pre-drill fastener holes 1/8" (3 mm) oversize with high-speed drill bit.

a. Space at 8" maximum on center at perimeter, approximately 1" from panel edge.
b. Space at in field in rows 16' on center, with fasteners spaced at 12" maximum on center.

C. Apply panels to board substrate, above base, vertically oriented with seams plumb and pattern aligned with adjoining panels.

1. Install panels with manufacturer's recommended gap for panel field and corner joints.

a. Adhesive trowel and application method to conform to adhesive manufacturer's recommendations.
b. Drive fasteners for snug fit. Do not over-tighten.

D. Apply panel moldings to all panel edges using silicone sealant providing for required clearances.

1. All moldings must provide for a minimum 1/8" of panel expansion at joints and edges, to insure proper installation.
2. Apply sealant to all moldings, channels, and joints between the system and different materials to assure watertight installation. CLEANING AND PROTECTION

E. Remove excess sealant from panels and moldings. Wipe panel down using a damp cloth and mild soap solution or cleaner.

F. Refer to manufacturer’s specific cleaning recommendations - Do not use abrasive cleaners.

END OF SECTION 097720

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on the following interior substrates:

1. Concrete.
2. Concrete masonry units (CMUs).
3. Steel and iron.
4. Galvanized metal.
5. Gypsum board.

B. Related Requirements:

1. Section 051200 "Structural Steel Framing" for shop priming structural steel and metal substrates with primers specified in this Section.
2. Section 099600 "High-Performance Coatings" for high-performance and special-use coatings.
3. Section 099113 "Exterior Painting" for surface preparation and the application of paint systems on exterior substrates.
4. Section 099300 "Staining and Transparent Finishing" for surface preparation and the application of wood stains and transparent finishes on interior wood substrates.

1.3 DEFINITIONS

A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. Indicate VOC content.

B. Samples for Initial Selection: For each type of topcoat product.

C. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

1.6 QUALITY ASSURANCE

A. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

B. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

C. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

D. Paint mockups as required per owners and architect.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:

1. Product name or title of material.
2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
1. Maintain containers in clean condition, free of foreign materials and residue.

2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Benjamin Moore & Co.
2. Glidden Professional.
3. Sherwin-Williams Company (The).

B. Products: Subject to compliance with requirements, provide one of the products listed in the Interior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:
1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. Low-Emitting Materials: For field applications that are inside the weatherproofing system, 90 percent of paints and coatings shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

D. Colors: Match Architect's samples.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMUs): 12 percent.
3. Gypsum Board: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.
1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer.

G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
   1. Use applicators and techniques suited for paint and substrate indicated.
   2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture.
   3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
   4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
   5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
   1. Paint the following work where exposed in equipment rooms:

      a. Equipment, including panelboards and switch gear.
      b. Uninsulated metal piping.
      c. Uninsulated plastic piping.
      d. Pipe hangers and supports.
      e. Metal conduit.
      f. Tanks that do not have factory-applied final finishes.
      g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.

   2. Paint the following work where exposed in occupied spaces:

      a. Equipment, including panelboards.
      b. Uninsulated metal piping.
      c. Uninsulated plastic piping.
      d. Pipe hangers and supports.
      e. Metal conduit.
      f. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
      g. Other items as directed by Architect.

   3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
   1. Contractor shall touch up and restore painted surfaces damaged by testing.
   2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Traffic Surfaces:

   1. Concrete Floor Sealer System MPI INT 3.2F:

      a. Topcoat: Sealer, solvent based, for concrete floors, MPI #104.
         1) Benjamin Moore: Insl-x, Tuffcrete SB Acrylic Waterproofing Concrete Stain Clear.
         2) PPG Architectural Finishes, Inc: 99-127 MegaSeal HSPC Clear Primer/Sealer.
         3) Sherwin Williams Company, (The): H&C Colortop Concrete Sealer.
      b. Surfaces: Sealed concrete floors in mechanical, electrical, and technology rooms.

B. CMU Substrates:

   1. Institutional Low-Odor/VOC Latex System MPI INT 4.2E:

      a. Block Filler: Block filler, latex, interior/exterior, MPI #4.

         1) Sherwin Williams Company, (The): Heavy Duty Block Filler.
         2) Benjamin Moore: Ultra Spec, Int/Ext High-Build Masonry Block Filler.
         3) PPG Architectural Finishes, Inc: Glidden Professional, Concrete Coatings Block Filler Interior/Exterior Primer.

      b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
      c. Topcoat: Latex, interior, institutional low odor/VOC, Egg Shell (MPI Gloss Level 3), MPI #147.

1) Sherwin Williams Company, (The): ProMar 200 Zero VOC Semi-Gloss – In lieu of MPI#147
2) Benjamin Moore: Ultra Spec 500, Waterborne Interior Gloss.
3) PPG Architectural Finishes, Inc: Dulux, Ultra Zero VOC Interior Latex Semi-Gloss.

C. Steel Substrates:

1. Water-Based Dry-Fall System MPI INT 5.1C:

a. Prime Coat: Primer, alkyd, quick dry, for metal, MPI #76.

1) Sherwin Williams Company, (The): Pro Industrial Pro-Cryl Universal Metal Primer.
2) Benjamin Moore: N/A.
3) PPG Architectural Finishes, Inc: Devoe Coatings, Devguard 4160.

b. Topcoat: Dry fall, latex, flat, MPI #118.

1) Sherwin Williams Company, (The): Pro Industrial, Waterborne Acrylic Dryfall.
2) Benjamin Moore: Benjamin Moore Dry Fall, Latex Dry Fall Flat.
3) PPG Architectural Finishes, Inc: Speedhide, Interior Dry Fog Spray Paint.

c. Surfaces: Exposed metal decking, trusses, structural steel and metal joists.

D. Galvanized-Metal Substrates:

1. Institutional Low-Odor/VOC Latex System MPI INT 5.3N:

a. Prime Coat: Primer, galvanized, water based, MPI #134.

1) Sherwin Williams Company, (The): Pro Industrial, Pro-Cryl Universal Primer.
2) Benjamin Moore: Ultra Spec HP, Acrylic Metal Primer.
3) PPG Architectural Finishes, Inc: Dulux Weatherguard , Exterior Latex Primer..

b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.

1) Sherwin Williams Company, (The): ProMar 200 Zero VOC Semi-Gloss – In lieu of MPI#147
2) Benjamin Moore: Ultra Spec 500, Waterborne Interior Gloss.
3) PPG Architectural Finishes, Inc: PPG Paints, Speedhide Zero Interior Zero VOC Latex Semi-Gloss.

d. Surfaces: Exposed metal decking and galvanized metal surfaces.

E. Gypsum Board and Substrates:

1. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:

a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.

1) Sherwin Williams Company, (The): ~~Harmony, Interior Latex Primer.~~ProMar 200 Zero VOC Primer B28
2) Benjamin Moore: Ultra Spec 500, Waterborne Interior Primer.
3) PPG Architectural Finishes, Inc: PPG Paints, Speedhide Zero Interior Zero VOC Latex Sealer.

b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
c. Topcoat: Latex, interior, institutional low odor/VOC, flat (MPI Gloss Level 1), MPI #143.

1) Sherwin Williams Company, (The): ProMar 200 Zero VOC Flat B30 Series
2) Benjamin Moore: Ultra Spec 500, Interior Flat Finish.
3) PPG Architectural Finishes, Inc: Speedhide Zero Interior Zero VOC Latex Flat.

d. Surfaces: Drywall ceilings and soffits subject to no abuse.

2. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:

a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.

1) Sherwin Williams Company, (The): ProMar 200 Zero VOC Primer
2) Benjamin Moore: Ultra Spec 500, Waterborne Interior Primer.
3) PPG Architectural Finishes, Inc: PPG Paints, Speedhide Zero Interior Zero VOC Latex Sealer.

b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

c. Topcoat: Latex, interior, institutional low odor/VOC (MPI Gloss Level 3), MPI #145.

1) Sherwin Williams Company, (The): ProMar 200 HP Zero VOC Egg-Shell.
2) Benjamin Moore: Ultra Spec 500, Interior Eggshell.
3) PPG Architectural Finishes, Inc: Dulux, Ultra Zero VOC Int. Latex Pearl.

d. Surfaces: Drywall walls in administrative areas.

3. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:

a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.

1) Sherwin Williams Company, (The): ProMar 200 Zero VOC Primer.
2) Benjamin Moore: Ultra Spec 500, Waterborne Interior Primer.
3) PPG Architectural Finishes, Inc: PPG Paints, Speedhide Zero Interior Zero VOC Latex Sealer.

b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.

1) Sherwin Williams Company, (The): ProMar 200 Zero VOC Semi-Gloss – In lieu of MPI#147
2) Benjamin Moore: Ultra Spec 500, Waterborne Interior Gloss.
3) PPG Architectural Finishes, Inc: Dulux, Ultra Zero VOC Interior Latex Semi-Gloss.

d. Surfaces: Drywall walls in classrooms and student-occupied areas.

END OF SECTION 099123

SECTION 102113 - TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Solid-polymer toilet compartments configured as toilet enclosures and urinal screens.

B. Related Sections:

1. Division 10 Section "Toilet Accessories" for toilet tissue dispensers, grab bars, purse shelves, and similar accessories.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For toilet compartments. Include plans, elevations, sections, details, and attachments to other work.

1. Show locations of cutouts for compartment-mounted toilet accessories.
2. Show locations of reinforcements for compartment-mounted grab bars.
3. Show locations of centerlines of toilet fixtures.
4. Show overhead support or bracing locations.

C. Samples for Initial Selection: For each type of unit indicated. Include Samples of hardware and accessories involving material and color selection.

D. Product Certificates: For each type of toilet compartment, from manufacturer.

E. Maintenance Data: For toilet compartments to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Comply with requirements in GSA's CID-A-A-60003, "Partitions, Toilets, Complete."

B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84, or another standard acceptable to authorities having jurisdiction, by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 75 or less.

2. Smoke-Developed Index: 450 or less.

C. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities" and ICC/ANSI A117.1 for toilet compartments designated as accessible.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of toilet fixtures, walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M.

B. Aluminum Extrusions: ASTM B 221 (ASTM B 221M).

C. Stainless-Steel Castings: ASTM A 743/A 743M.

D. Zamac: ASTM B 86, commercial zinc-alloy die castings.

2.2 SOLID-POLYMER UNITS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Accurate Partitions Corporation; Solid Plastic Series.
2. Comtec Industries/Capitol Partitions; Solid Plastic Series.
3. General Partitions Mfg. Corp.; High Density Polymer Series.
4. Santana Products, Inc.; Poly-Mar HD and Poly-Granite HD Series.
5. Weis-Robart Partitions, Inc.; Weis/Poly Series.

B. Toilet-Enclosure Style: Overhead braced, Floor anchored.

C. Urinal-Screen Style: Wall hung, Floor anchored.

D. Door, Panel, Screen, and Pilaster Construction: Solid, high-density polyethylene (HDPE) panel material, not less than 1 inch (25 mm) thick, seamless, with eased edges, and with homogenous color and pattern throughout thickness of material.

1. Heat-Sink Strip: Manufacturer's standard continuous, [extruded-aluminum] [or] [stainless-steel] strip fastened to exposed bottom edges of solid-polymer components to prevent burning.
2. Color and Pattern: One color and pattern in each room as selected by Architect from manufacturer's full range of colors and patterns (minimum 15).

E. Pilaster Shoes for Toilet Partitions: Manufacturer's standard design; stainless steel.

F. Pilaster Shoes for Dressing Compartments and Shower Enclosures: Manufacturer's standard design; solid polymer.

G. Urinal-Screen Post: Manufacturer's standard post design of material matching the thickness and construction of pilasters; with shoe matching that on the pilaster.

H. Brackets (Fittings):

1. Full-Height (Continuous) Type: Stainless steel.

I. Overhead Cross Bracing for Ceiling-Hung Units: As recommended by manufacturer and fabricated from solid polymer.

2.3 ACCESSORIES

A. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories.

1. Material: Clear-anodized aluminum.
2. Hinges: Manufacturer's standard integral hinge for solid-polymer doors, self-closing.
3. Latch and Keeper: Manufacturer's standard surface-mounted latch unit designed for emergency access and with combination rubber-faced door strike and keeper. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.
4. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent in-swinging door from hitting compartment-mounted accessories.
5. Door Bumper: Manufacturer's standard rubber-tipped bumper at out-swinging doors.
6. Door Pull: Manufacturer's standard unit at out-swinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at compartments designated as accessible.

B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with antigrip profile and in manufacturer's standard finish.

C. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel or chrome-plated steel or brass, finished to match the items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless steel, hot-dip galvanized steel, or other rust-resistant, protective-coated steel.

2.4 FABRICATION

A. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.

B. Floor-Anchored Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts at pilasters for structural connection to floor. Provide shoes at pilasters to conceal anchorage.

C. Urinal-Screen Posts: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment at bottoms of posts. Provide shoes at posts to conceal anchorage.

D. Door Size and Swings: Unless otherwise indicated, provide 24-inch- (610-mm-) wide, in-swinging doors for standard toilet compartments and 36-inch- (914-mm-) wide, out-swinging doors with a minimum 32-inch- (813-mm-) wide, clear opening for compartments designated as accessible.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.

1. Maximum Clearances:

a. Pilasters and Panels: 1/2 inch (13 mm).
b. Panels and Walls: 1 inch (25 mm).

B. Overhead-Braced Units: Secure pilasters to floor and level, plumb, and tighten. Set pilasters with anchors penetrating not less than 1-3/4 inches (44 mm) into structural floor unless otherwise indicated in manufacturer's written instructions. Secure continuous head rail to each pilaster with no fewer than two fasteners. Hang doors to align tops of doors with tops of panels, and adjust so tops of doors are parallel with overhead brace when doors are in closed position.

C. Floor-Anchored Units: Set pilasters with anchors penetrating not less than 2 inches (51 mm) into structural floor unless otherwise indicated in manufacturer's written instructions. Level, plumb, and tighten pilasters. Hang doors and adjust so tops of doors are level with tops of pilasters when doors are in closed position.

D. Urinal Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb, rigid, and secured to resist lateral impact.

3.2 ADJUSTING

A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

END OF SECTION 102113

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Washroom / Restroom accessories.
2. Custodial accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include the following:

1. Construction details and dimensions.
2. Anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
3. Material and finish descriptions.
4. Features that will be included for Project.
5. Manufacturer's warranty.

B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.

1. Identify locations using room designations indicated.
2. Identify products using designations indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For toilet and bath accessories to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Source Limitations: For products listed together in the same Part 2 articles, obtain products from single source from single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.7 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.8 WARRANTY

A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, 0.031-inch minimum nominal thickness unless otherwise indicated.

B. Brass: ASTM B 19, flat products; ASTM B 16/B 16M, rods, shapes, forgings, and flat products with finished edges; or ASTM B 30, castings.

C. Steel Sheet: ASTM A 1008/A 1008M, Designation CS (cold rolled, commercial steel), 0.036-inch minimum nominal thickness.

D. Galvanized-Steel Sheet: ASTM A 653/A 653M, with G60 hot-dip zinc coating.

E. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

F. Fasteners: Screws, bolts, and other devices of same material as accessory unit and tamper-and-theft resistant where exposed, and of galvanized steel where concealed.

G. Chrome Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).

H. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

I. ABS Plastic: Acrylonitrile-butadiene-styrene resin formulation.

2.2 WASHROOM / RESTROOM ACCESSORIES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. A & J Washroom Accessories, Inc.
2. American Specialties, Inc.
3. Bobrick Washroom Equipment, Inc.
4. Bradley Corporation.
5. GAMCO Specialty Accessories; a division of Bobrick Washroom Equipment, Inc.

B. Toilet Tissue (Roll) Dispenser (TP): Provided by owner; installed by contractor.

C. Paper Towel (Folded) Dispenser (PT): for Individual Restrooms and countertop sink locations. Provided by owner; installed by contractor.

D. Foam-Soap Dispenser (SD): Provided by owner; installed by contractor.

E. Grab Bar (GB):

1. Manufacturers: Subject to compliance with requirements, provide one of the following:
   a. American Specialties, Inc.; 3100 Series.
   b. Bobrick Washroom Equipment, Inc.; B-5806.99 Series.
   c. Bradley Corporation; 832.
2. Mounting: Flanges with concealed fasteners.
3. Material: Stainless steel, 0.05 inch thick.
   a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.
4. Outside Diameter: 1-1/4 inches.
5. Configuration and Length: As indicated on Drawings.

F. Sanitary-Napkin Disposal Unit (SND):

1. Manufacturers: Subject to compliance with requirements, provide one of the following:
   a. American Specialties, Inc.; 2085Z.
   b. Bobrick Washroom Equipment, Inc.; B-270.
   c. Bradley Corporation; 4781-15.
2. Mounting: Surface mounted.
3. Door or Cover: Self-closing, disposal-opening cover
4. Receptacle: Removable.
5. Material and Finish: Stainless steel, No. 4 finish (satin).

G. Mirror Unit (MR):

1. Manufacturers: Subject to compliance with requirements, provide one of the following:
   a. American Specialties, Inc.; 0600.
   b. Bobrick Washroom Equipment, Inc.; B-290 Series.
   c. Bradley Corporation; 781.
2. Frame: Stainless-steel angle, 0.05 inch thick.
   a. Corners: Welded and ground smooth.

3. Hangers: Produce rigid, tamper- and theft-resistant installation, using method indicated below.
   a. One-piece, galvanized-steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
   b. Wall bracket of galvanized steel, equipped with concealed locking devices requiring a special tool to remove.

4. Size: As indicated on Drawings.

H. Robe Hook (RH/RHADA):

1. Manufacturers: Subject to compliance with requirements, provide one of the following:
   a. American Specialties, Inc.; 7345.
   b. Bobrick Washroom Equipment, Inc.; B-6727.
   c. Bradley Corporation; 9125.

2. Robe Hook: Contoured 4-inch wide bar that forms hook at each end.
   a. Single-Prong Unit: Stainless-steel, single-prong robe hook with rectangular wall bracket and backplate for concealed mounting.

3. Material and Finish: Stainless steel, No. 4 finish (satin).

4. Stainless-Steel Nominal Thickness: 22-gauge flange and support arm, 18-gauge concealed wall plate.

2.3 CUSTODIAL ACCESSORIES

A. Utility Shelf with Mop and Broom Holder (MBH):

1. Manufacturers: Subject to compliance with requirements, provide one of the following:

   a. American Specialties, Inc.; 1308.
   b. Bobrick Washroom Equipment, Inc.; B-239 x 34.
   c. Bradley Corporation; 9933.

2. Description: Unit with shelf, hooks, holders, and rod suspended beneath shelf.
3. Length: 34 to 36 inches.
4. Hooks: Four.
5. Mop/Broom Holders: Three spring-loaded, rubber hat, cam type.
6. Material and Finish: Stainless steel, No. 4 finish (satin).
   a. Shelf: Not less than nominal 0.05-inch- thick stainless steel.
   b. Rod: Approximately 1/4-inch- diameter stainless steel.

2.4 FABRICATION

A. General: Fabricate units with tight seams and joints, and exposed edges rolled. Hang doors and access panels with full-length, continuous hinges. Equip units for concealed anchorage and with corrosion-resistant backing plates.

B. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units' level, plumb, and firmly anchored in locations and at heights indicated.

B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to ASTM F 446.

3.2 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

END OF SECTION 102800

SECTION 123216 - MANUFACTURED PLASTIC-LAMINATE-FACED CASEWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Plastic-laminate-faced wood cabinets of stock design.
2. Plastic-laminate-faced wood music cabinets of stock design.
3. Custom millwork.
4. Accessories common to casework.

B. Related Sections:

1. Division 06 Section "Rough Carpentry" for wood blocking for anchoring casework.
2. Division 06 Section "Interior Finish Carpentry."
3. Division 08 Section "Glazing" for glass installed as display case doors and shelving.
4. Division 09 Section "Non-Structural Metal Framing" for reinforcements in metal-framed partitions for anchoring casework.
5. Division 09 Section "Resilient Base and Accessories" for resilient base applied to plastic-laminate-faced casework.
6. Division 12 Section "Wood Laboratory Casework".
7. Section 123623.13 "Plastic-Laminate-Clad Countertops."
8. Division 12 Section "Simulated Stone Countertops."
9. Division 22 Plumbing, Division 23 Mechanical, and Division 26 Electrical Sections.
    a. Installation of service fixtures is included under mechanical work of Division 23 and electrical work of Division 26.
    b. Furnishing and installation of waste lines and traps are specified in Division 22.
10. Division 12 Section “Custom Upholstered Cushions” for upholstered cushion fabrication and installation on manufactured wood casework.

1.3 DEFINITIONS

A. Definitions in the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards" apply to the work of this Section.

B. MDF: Medium-density fiberboard.

C. Hardwood Plywood: A panel product composed of layers or plies of veneer, or of veneers in combination with lumber core, hardboard core, MDF core, or particleboard core, joined with adhesive, and faced both front and back with hardwood veneers.

D. Exposed Portions of Cabinets: Surfaces visible when doors and drawers are closed, including bottoms of cabinets more than 48 inches (1220 mm) above floor, and surfaces visible in open cabinets.

E. Semiexposed Portions of Cabinets: Surfaces behind opaque doors, such as interiors of cabinets, shelves, dividers, interiors and sides of drawers, and interior faces of doors. Tops of cases 78 inches (1980 mm) or more above floor are defined as semiexposed.

F. Concealed Portions of Cabinets: Surfaces not usually visible after installation, including sleepers, web frames, dust panels, and ends and backs that are placed directly against walls or other cabinets.

1.4 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that casework can be supported and installed as indicated.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show fabrication details, including types and locations of hardware. Show installation details, including field joints and filler panels. Include layout of units with relation to surrounding walls, doors, windows, and other building components. Coordinate shop drawings with other work involved. Indicate manufacturer's catalog numbers for casework.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

C. Sample Warranty: For special warranty.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer for installation of units required for this Project.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver manufactured wood casework only after painting, utility roughing-in, and similar operations that could damage, soil, or deteriorate casework have been completed in installation areas. If casework must be stored in other than installation areas, store only in areas where environmental conditions meet requirements specified in "Project Conditions" Article.

B. Keep finished surfaces covered with polyethylene film or other protective covering during handling and installation.

1.9 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install casework until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period. Maintain temperature and relative humidity during the remainder of the construction period in range recommended for Project location by the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards."

B. Field Measurements: Verify actual dimensions of construction contiguous with manufactured wood casework by field measurements before fabrication.

C. Locate concealed framing, blocking, and reinforcements that support casework by field measurements before being enclosed, and indicate measurements on Shop Drawings.

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of casework that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Delamination of components or other failures of glue bond.
b. Warping of components.
c. Failure of operating hardware.
d. Deterioration of finishes.

2. Warranty Period: Three years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Plastic-Laminate-Faced Manufactured Casework:

a. Southern Cabinetry.
b. Stevens Industries, Inc.
c. TMI Systems Design Corporation.

2. Plastic-Laminate-Faced Manufactured Music Casework:
a. Southern Cabinetry.
b. Stevens Industries, Inc.
c. TMI Systems Design Corporation.

B. Source Limitations: Obtain all general plastic-laminate cabinets from single manufacturer.

2.2 CASEWORK, GENERAL

A. Quality Standard: Unless otherwise indicated, comply with the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards" for grades of casework indicated for construction, finishes, installation, and other requirements.

1. Grade: Custom.
2. Provide certificates from AWI certification program indicating that casework, including installation, complies with requirements of grades specified.

B. Product Designations: Drawings indicate sizes, configurations, and finish materials of manufactured plastic-laminate-faced cabinets by referencing designated manufacturer's catalog numbers. Other manufacturers' of casework listed in this section shall provide identical sizes and door and drawer configurations, of same finish materials, and complying with the Specifications.

2.3 CASEWORK

A. Design:

1. Flush overlay.

B. Exposed Materials:
1. High pressure decorative laminate complying with NEMA LD3, Grade GP-28.
2. Colors and Patterns: As selected by Architect from plastic laminate manufacturers' full ranges.
3. Unless otherwise indicated, provide specified edgebanding on all exposed edges.

C. Semiexposed Materials:

1. High pressure decorative laminate complying with NEMA LD3, Grade CL-30 unless otherwise indicated.

2.4 MATERIALS

A. Low-Emitting Materials: Adhesives and composite wood products shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers." Adhesives and composite wood products shall not contain urea formaldehyde.

B. Maximum Moisture Content for Lumber: 7 percent for hardwood and 12 percent for softwood.

C. Hardwood Plywood: HPVA HP-1, particleboard core except where veneer core is indicated; that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Softwood Plywood: DOC PS 1.

E. Particleboard: ANSI A208.1, Grade M-2; that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

F. MDF: ANSI A208.2, Grade 130; that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

G. Hardboard: ANSI A135.4, Class 1 Tempered.

H. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3.

1. Manufacturers: Subject to compliance with requirements, Architect shall select from manufacturers' full ranges of standard products by all of the following:

    a. Arborite; a division of ITW Canada.
    b. Formica Corporation.
    c. Nevamar Company, LLC; a division of Panolam Industries International Inc.
    d. Panolam Industries International Inc.
    e. Wilsonart International.

I. Plastic Laminate Accent (WHERE LOCATED/ WHAT ROOM):

1. Manufacturers: Subject to compliance with requirements, Architect shall select from manufacturers' full ranges of standard products by all of the following:
    a. Pionite, a division of Panolam Industries International Inc.: xxxxxx
    b. Formica Cormoration: xxxxx
    c. Wilsonart International: xxxxx

J. Edgebanding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 3 mm thick at doors and drawer fronts, 1 mm thick elsewhere.

K. Edgebanding for Thermoset Decorative Panels: PVC or polyester edge banding complying with LMA EDG-1 and matching thermoset decorative panels.

L. Glass for Glazed Doors: Clear tempered glass complying with ASTM C 1048, Kind FT, Condition A, Type I, Class 1, Quality-Q3; not less than 5.0 mm thick.

M. Grille Doors: Music instrument doors shall be electronically welded, 0.314-inch diameter heavy gauge steel perimeter and crossbrace wire, and 0.194-inch diameter vertical stringer wire. Doors shall have 180-degree five-knuckle hinge constructed of 0.090-inch minimum thickness steel, attached to cabinet body as thru-bolt with tamper resistant bolt fasteners. Lock hasp shall be formed and welded to door frame and cross members. Lock hasp shall provide space for with name/number plate. One Grille door shall be provided for each cubby/instrument. Grille doors shall have a powder coat finish, in color as selected by Architect from manufacturer's full range of colors.

N. Architectural Moldings for Millwork:

1. Reveal Molding: Anodized aluminum channel for reveals in dimensions as indicated on Architectural drawings. Eagle Mouldings: Channels or Architect approved equal. Finish shall be as selected by Architect from manufacturer's full range of anodized finishes.
2. Outside Corner Molding: Anodized aluminum 90-degree corner trim for outside corners in dimensions as indicated on Architectural drawings. Eagle Mouldings: Out Corners or Architect approved equal. Finish shall be as selected by Architect from manufacturer's full range of anodized finishes.
3. Divider Molding: Anodized aluminum divider trim for panel joints in dimensions as indicated on Architectural drawings. Eagle Mouldings: Dividers or Architect approved equal. Finish shall be as selected by Architect from manufacturer's full range of anodized finishes.

2.5 COLORS AND FINISHES

A. Thermoset Decorative Panel Colors, Patterns, and Finishes: As selected by Architect from casework manufacturer's full range.

B. Plastic-Laminate Colors, Patterns, and Finishes: As selected by Architect from all specified plastic-laminate manufacturers' full ranges.

C. PVC Edgebanding Color: As selected from PVC edge banding manufacturer's full range of products by all of the following:
   1. Charter Industries, Inc.
   2. Doellken-Woodtape.
   3. Rehau.

2.6 FABRICATION

A. Plastic-Laminate-Faced Cabinet Construction: As required by referenced quality standard, but not less than the following:

   1. Bottoms and Ends of Cabinets, and Tops of Wall Cabinets and Tall Cabinets: 3/4-inch (19-mm) particleboard, plastic-laminate faced.
   2. Shelves: 1-inch (25.5-mm) particleboard, plastic-laminate faced.
   3. Plastic Shelves: Shelf cover molded of high strength polyethylene with continuous ventilation groves and a radiused front edge over a melamine laminated particleboard core. Shelf to be permanently attached with concealed fasteners. Shelf cover shall not be removable and shall not delaminate from core.
   4. Bottoms and Ends of Cabinets, and Tops of Wall Cabinets and Tall Cabinets: 3/4-inch (19-mm) particleboard, plastic-laminate faced.
   5. Backs of Cabinets: 1/2-inch (12.7-mm) particleboard, plastic-laminate faced on exposed surfaces, thermoset decorative panels on semiexposed surfaces.
   6. Drawer Fronts: 3/4-inch (19-mm) particleboard, plastic-laminate faced.
   7. Drawer Sides and Backs: 1/2-inch (12.7-mm) thermoset decorative panels, with glued dovetail or multiple-dowel joints.
   8. Drawer Bottoms: 1/4-inch (6.4-mm) thermoset decorative panels glued and dadoed into front, back, and sides of drawers. Use 1/2-inch (12.7-mm) material for drawers more than 24 inches (600 mm) wide.
   9. Doors: 3/4-inch (19-mm) MDF, plastic-laminate faced.
   10. Paper storage drawers: Construct paper drawers with retaining hood at the rear of each drawer.

B. Filler Strips: Provide as needed to close spaces between cabinets and walls, ceilings, and indicated equipment. Fabricate from same material and with same finish as cabinets.

2.7 CASEWORK HARDWARE AND ACCESSORIES

A. Hardware, General: Unless otherwise indicated, provide manufacturer's standard satin-finish, commercial-quality, heavy-duty hardware.

   1. Use threaded metal or plastic inserts with machine screws for fastening to particleboard except where hardware is through-bolted from back side.

B. Butt Hinges: Stainless-steel or Chrome-plated, semi-concealed, 5-knuckle hinges complying with BHMA A156.9, Grade 1, with antifriction bearings and rounded tips. Provide 2 hinges for doors less than 48 inches (1220 mm) high and 3 hinges for doors more than 48 inches (1220 mm) high.

C. Pulls: Solid stainless-steel or chrome-plated brass wire pulls, fastened from back with two screws.

D. Door Catches:
   1. Zinc-plated or powder-coated, nylon-roller spring catch. Provide 2 catches on doors more than 48 inches (1220 mm) high.
   2. Provide metal chain link catch at all instances where a door swing will project within 1 inch of adjacent cabinet, appliance, wall, or similar.

E. Drawer Slides: BHMA A156.9, Type B05091.

1. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Side mounted; zinc-plated, steel ball-bearing slides.
2. Box Drawer Slides: Grade 1HD-100, for drawers not more than 6 inches (150 mm) high and 24 inches (600 mm) wide.
3. File Drawer Slides: Grade 1HD-200, for drawers more than 6 inches (150 mm) high or 24 inches (600 mm) wide.

F. Label Holders: Stainless steel or chrome plated, sized to receive standard label cards approximately 1 by 2 inches (25 by 51 mm), attached with screws or brads.

1. Provide label holders where indicated.

G. Drawer and Hinged Door Locks: Cylindrical (cam) type, 5-pin tumbler, brass with chrome-plated finish, and complying with BHMA A156.11, Grade 1.

1. Provide locks on all doors and drawers.
2. Locks shall be stamped with identifying numbers and keys shall be provided by manufacturer and available from a registered locksmith.
3. Provide a minimum of two keys per lock and six master keys.
4. Keys and sequencing of lock system shall be determined when shop drawings are issued.

H. Adjustable Shelf Supports: 2-pin locking plastic shelf rests complying with BHMA A156.9, Type B04013.

I. Grommets for Cable Passage: 2-inch (51-mm) OD, molded-plastic grommets and matching plastic caps with slot for wire passage.

J. Wire-management tray system: Wire mesh cable tray constructed of 5 and 6-mm diameter steel wires, welded on 2-inch by 4-inch (50-mm x 100-mm) intersections with zinc or black powder coat paint finish; install with wire mesh cable tray manufacturer’s brackets and hangers as required. Equal to Chatsworth Products, Inc. Ontrac Wire Mesh Cable Tray System.

K. Wire-management chase: 2-inch by 2-inch (50-mm x 50-mm) molded plastic wire manager for wire passage; install with mechanical fasteners per manufacturer’s recommendations. Paint to match wall finish.

L. Countertop Support Brackets: Open style 1-¼-inch wide x ¼-inch thick welded steel bracket with ¼-inch thick gusset between the support flanges that is positioned with its broad surface showing to the front of the bracket. Design shall allow for installation of wire management tray beneath countertop. Bracket shall have pre-drilled holes for mounting and powder-coat finish. Size shall be determined by depth of countertop.

M. Vinyl Fabric for Display Cases: Mildew resistant, washable, complying with FS CCC-W-408D; weighing not less than 20 oz./sq. yd.; with flame-spread index of 25 or less when tested according to ASTM E 84. Architect will select from manufacturer’s full range of colors (minimum 100) of material specified in section 097200 "Wall Coverings" for this project.

N. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
2. Satin Stainless Steel: BHMA 630.

O. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

P. Fasteners used in pressure-preservative-treated lumber shall be hot-dip galvanized or stainless steel.

2.8 PLASTIC-LAMINATE COUNTERTOPS & FABRIC UPHOLSTERED BENCHES (Extended Learning Areas)

A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades indicated for construction, installation, and other requirements.
1. Provide certificates from AWI certification program indicating that countertops, including installation, comply with requirements of grades specified.

B. Grade: Custom.

C. Certified Wood: Plastic-laminate countertops shall be made from wood products certified as "FSC Pure"[**or "FSC Mixed Credit"**] according to FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and FSC STD-40-004, "FSC Standard for Chain of Custody Certification."

D. High-Pressure Decorative Laminate: NEMA LD 3, Grade HGS.
1. Manufacturers: Subject to compliance with requirements, Architect shall select from manufacturers' full ranges of standard products by all of the following:
a. Arborite; a division of ITW Canada.
b. Formica Corporation
c. Nevamar Company, LLC; a division of Panolam Industries International Inc.
d. Panolam Industries International, Inc.
e. Wilsonart International; Div. of Premark International, Inc.

E. Chemical-Resistant, High-Pressure Decorative Laminate: NEMA LD 3, Grade HGP, and as follows:
1. Laminate has the following ratings when tested with indicated reagents according to NEMA LD 3, Test Procedure 3.9.5:
a. Nitric Acid (30 Percent): Moderate effect.
b. Sulfuric Acid (77 Percent): Moderate effect.
c. Hydrochloric Acid (37 Percent): Moderate effect.
d. Phosphoric Acid (75 Percent): No effect.
e. Acetic Acid (98 Percent): No effect.
f. Formaldehyde: No effect.
g. Ethyl Acetate: No effect.
h. Ethyl Ether: No effect.
i. Phenol (85 Percent): Moderate effect.
j. Benzene: No effect.
k. Xylene: No effect.
l. Butyl Alcohol: No effect.
m. Furfural: No effect.
n. Methyl Ethyl Ketone: No effect.
o. Sodium Hydroxide (25 Percent): No effect.
p. Sodium Sulfide (15 Percent): No effect.
q. Ammonium Hydroxide (28 Percent): No effect.
r. Zinc Chloride: No effect.
s. Gentian Violet: No effect.
t. Methyl Red: No effect.
2. Products: Subject to compliance with requirements, Architect shall select from manufacturers' full ranges of standard and made-to-order products by all of the following:
a. Arborite; a division of ITW Canada; Arbochem Laminate.
b. Formica Corporation; Chemtop2.

c. Nevamar Company, LLC; a division of Panolam Industries International Inc.; Chemarmor.
d. Panolam Industries International, Inc.; Chemguard.
e. Wilsonart International, Div. of Premark International, Inc.; Chemsurf.

F. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
1. As indicated by manufacturer's designations.
2. Match Architect's sample.
3. As selected by Architect from manufacturer's full range in the following categories:
a. Solid colors, matte or smooth textured low-sheen finish.
b. Wood grains, matte or smooth textured low-sheen finish.
c. Patterns, matte or smooth textured low-sheen finish.

G. Edge Treatment for tops and Back- and Side-Splashes: 3-mm PVC edging.

H. Core Material: Particleboard.

I. Core Material at Sinks: Particleboard made with exterior glue or exterior-grade plywood.

J. Core Thickness for Countertops: 1-1/8 inch.

K. Core Thickness for Back- and Side-Splashes: ¾-inch, maximum.

L. Backer Sheet: Provide plastic-laminate backer sheet, NEMA LD 3, Grade BKL, on underside of countertop substrate.

M. Fabric Upholstered Cushions: Refer to Division 12 Section “Custom Upholstered Cushions” for upholstered cushion fabrication and installation on manufactured wood casework.

2.9 FABRIC UPHOLSTERED BENCHES

A. Bench tops, General: Provide smooth, clean exposed tops and edges in uniform plane free of defects.

B. Plastic-Laminate Tops: Plastic-laminate sheet, shop bonded to both sides of 1-1/8-inch (29-mm) particleboard. Sand surfaces to which plastic laminate is to be bonded. Refer to Division 12 Section “Plastic-Laminate-Clad Countertops” for bench and countertop surfaces.

1. Plastic Laminate for 1 inch from front edge of Flat Tops: Grade HGS.
2. Provide 3-mm PVC edging on front edge of top, and on ends of tops.

C. Fabric Upholstered Cushions: Refer to Division 12 Section “Custom Upholstered Cushions” for upholstered cushion fabrication and installation on manufactured wood casework. Plastic laminate back- and side-splashes shall be 3/4-inch thick.

2.10 HARDWARE FOR DISPLAY CASE GLASS INSTALLATION

A. Hardware: Sliding Glass System to include Continuous upper channel, Continuous lower track, Ball-Bearing Carrier, Door Shoe and Lock.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Knape & Vogt: P992 Large Glass Door System or comparable product by one of the following:

a. Blumcraft of Pittsburgh; Laurence, C.R. Co., Inc.

b. EPCO- Engineered Products Company.
c. Knape & Vogt.

2. Dimensions: As indicated on Drawings.

3. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

a. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
b. Satin Stainless Steel: BHMA 630.
c. Fasteners: Fabricated of same basic metal and alloy as fastened metal and matching in finished color and texture where fasteners are exposed.

4. Gaskets: Manufacturer's standard, compatible with decorative glass type indicated.
5. Anchors and Inserts: Provide devices as required for hardware installation. Provide metal expansion-bolt devices for drilled-in-place anchors. Provide galvanized or stainless steel anchors and inserts for applications on inside face of walls and where indicated.
6. Aluminum Slides for Sliding Glass Doors: BHMA A156.9, B07063.
7. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081 or BHMA A156.9, B04102; with shelf brackets, B04112.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances, location of framing and reinforcements, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 CASEWORK INSTALLATION

A. Grade: Install cabinets to comply with same grade as item to be installed.

B. Install level, plumb, and true; shim as required, using concealed shims. Where manufactured wood casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical.

C. Base Cabinets: Set cabinets straight, level, and plumb. Adjust subtops within 1/16 inch of a single plane. Align similar adjoining doors and drawers to a tolerance of 1/16 inch . Bolt adjacent cabinets together with joints flush, tight, and uniform.

1. Fasten cabinets to masonry or framing, wood blocking, or reinforcements in walls and partitions with fasteners spaced 24 inches (600 mm) o.c.
2. Where base cabinets are not installed adjacent to walls, fasten to floor at toe space with fasteners spaced 16 inches (400 mm) o.c. Secure sides of cabinets to floor, where they do not adjoin other cabinets, with not less than two fasteners.

D. Wall Cabinets: Hang cabinets straight, level and plumb. Adjust fronts and bottoms within 1/16 inch (1.5 mm) of a single plane. Fasten to hanging strips, masonry, or framing, blocking, or reinforcements in walls or partitions. Align similar adjoining doors to a tolerance of 1/16 inch (1.5 mm).

E. Fasten cabinets to adjacent cabinets and to masonry, framing, wood blocking, or reinforcements in walls and partitions to comply with the AWI's, AWMAC's, and WI's "Architectural Woodwork Standards."

F. Install hardware uniformly and precisely. Set hinges snug and flat in mortises unless otherwise indicated. Adjust and align hardware so moving parts operate freely and contact points meet accurately. Allow for final adjustment after installation.

G. Adjust casework and hardware so doors and drawers operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

H. Side edge of countertop at end of run of base cabinets must extend 1/2” beyond the base cabinet.

I. Where base cabinet meets a wall or a tall cabinet, a side splash must be installed.

J. Protective surface material must be applied to all horizontal countertop surfaces and edges, to prevent scratches and damage from all trades, until final project completion.

3.3 CLEANING

A. Repair or remove and replace defective work as directed on completion of installation.

B. Clean finished surfaces, touch up as required, and remove or refinish damaged or soiled areas to match original factory finish, as approved by Architect.

C. Keys and Accessories: All keys and loose accessories items shall be tagged with identification, boxed, listed and turned over to the Owner at the completion of the work.

END OF SECTION 123216

SECTION 123661.16 - SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Solid-surface-material countertops and backsplashes.
2. Solid surface material window sills.

B. Related Sections:

1. Division 06 Section "Rough Carpentry" for wood blocking for anchoring casework.
2. Division 06 Section "Interior Finish Carpentry."
3. Division 09 Section "Non-Structural Metal Framing" for reinforcements in metal-framed partitions for anchoring casework.
4. Division 12 Section "Manufactured Plastic-Laminate-Faced Casework".

1.3 ACTION SUBMITTALS

A. Product Data: For countertop materials.

B. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

1. Show locations and details of joints.
2. Show direction of directional pattern, if any.

C. Samples for Initial Selection: For each type of material exposed to view.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For solid surface material countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of countertops.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify dimensions of countertops by field measurements after base cabinets are installed but before countertop fabrication is complete.

1.8 COORDINATION

A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP MATERIALS

A. Solid Surface Material: Solid sheets of homogeneous-filled plastic resin complying with ICPASS-1.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Corian Sorrel

B. Particleboard: ANSI A208.1, Grade M-2.

2.2 COUNTERTOP FABRICATION

A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."

1. Grade: Custom.

B. Configuration:

1. Front: Straight, slightly eased at top.
2. Backsplash: Straight, slightly eased at corner.
3. End Splash: Matching backsplash.

C. Countertops: 3/4-inch- thick, solid surface material.

D. Fabricate tops with shop-applied edges unless otherwise indicated. Comply with solid surface material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.

1. Fabricate with loose backsplashes for field assembly.

E. Joints: Fabricate countertops in sections for joining in field, with joints at locations indicated.

1. Joint Locations: Not where a countertop section less than 36 inches long would result, unless unavoidable.

F. Cutouts and Holes:

1. Fittings: Drill countertops in shop for power access and similar items in reception desks.

2.3 INSTALLATION MATERIALS

A. Adhesive: Product recommended by solid surface material manufacturer.

1. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Sealant for Countertops: Comply with applicable requirements in Section 079200 "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units.

B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

C. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.

D. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

E. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.

1. Install metal splines in kerfs in countertop edges at joints. Fill kerfs with adhesive before inserting splines and remove excess immediately after adjoining units are drawn into position.
2. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned and joints are of specified width.

F. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.

G. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

1. Seal edges of cutouts in particleboard subtops by saturating with varnish.

H. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.16