PROJECT MANUAL

A NEW BUILDING
for
GUIDANCE FOR BEHAVIORAL HEALTH
1206 Stubbs Avenue
Monroe, Louisiana 71201

Date
December, 2025
Architect's Project Number
05-GFBHOB25

SET NUMBER

TABLE OF CONTENTS

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INSTRUCTIONS TO BIDDERS

ARTICLE 1

DEFINITIONS

1.1 The Bidding Documents include the following:

Table of Contents
Instructions to Bidders
Louisiana Public Bid Form
General Conditions of the Contract for Construction, AIA Document 201, 2017 edition
Supplementary Conditions
Contract between Owner and Contractor, AIA Document A101, 2017 edition
Addenda issued during the bid period and acknowledged in the Bid Form.
Specifications, Divisions 1 thru 16 & dated December 2025
Drawings Nos. (T1.01 – E5.01) consisting of 33 sheets dated November 26, 2025.

1.2 All definitions set forth in the General Conditions of the Contract for Construction, AIA Document, A201, or in other Contract Documents are applicable to the Bidding Documents.

1.21 AIA Document A101-2007; In Section 6.2 Binding Dispute Resolution; The Litigation in a court of competent jurisdiction will be the method of binding dispute resolution.

1.22 AIA Document A101-2007; The contract terms, including the date of commencement of the work, date of substantial completion, contract sum owed and additional terms have not yet been determined and therefore are not specified. The apparent low bidder that has been awarded the project after the public bid will be issued these contract terms including construction time, notice to proceed, substantial completion, and liquidated damages per the construction documents and specifications.

1.3 Addenda are written or graphic instruments issued by the Architect prior to the openings of bids which modify or interpret the bidding documents by additions, deletions, clarifications, corrections and prior approvals.

1.4 A Bid is a complete and properly signed proposal to do the Work or designated portion thereof for the sums stipulated therein supported by data called for by the Bidding Documents.

1.5 Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described as the Base, to which Work may be added for sums stated in Alternate Bids.

1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to the amount of the Base Bid if the corresponding change in project scope or materials or methods of construction described in the Bidding Documents is accepted.

1.7 A Bidder is one who submits a Bid for a prime contract with the Owner for the Work described in the proposed Contract Documents.

1.8 Sub-bidder is one who submits a bid to a Bidder for materials and/or labor for a portion of the Work.

1.9 Where the word "Architect" is used in any of the Documents, it shall refer to the Prime Designer of the project, and Architect, Engineer or Landscape Architect.

ARTICLE 2

BIDDER'S REPRESENTATION

2.1 Each Bidder by making his bid represents that:

2.1.1 He has read and understands the Bidding Documents and his Bid is made in accordance therewith.

2.1.2 He has visited the site and has familiarized himself with the local conditions under which the Work is to be performed. <u>This is critical due to the amount of different building and different type of work.</u>

2.1.3 His Bid is based upon the materials, systems and equipment described in the Bidding Documents as advertised and as modified by Addenda. Contractor shall not rely on any verbal instructions during bidding unless issued in written Addendum.

2.2 The Bidder must be fully qualified under any state or local licensing law for Contractors in effect at the time and at the location of the Work before submitting his bid. In the State of Louisiana, Revised Statutes 37:2150, et seq. will be considered, if applicable. The Contractor shall be responsible for determining that all of his Sub-bidders or prospective Sub-contractors are duly licensed in accordance with law.

ARTICLE 3

BIDDING DOCUMENTS

3.1 Copies

3.1.1 Complete Bidding Documents for this project are not available in printed form. Complete Bid Documents for this project are available in electronic form. Printed copies are not available from the Designer, but arrangements can be made to obtain them through most reprographic firms. Plan holders are responsible for their own reproduction costs for construction. Questions about this procedure shall be with TA²G (The Architecture Alliance Group).

3.1.2 Complete sets of Bidding Documents shall be used in preparing bids; neither the Owner nor the Architect assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

3.1.3 The Owner or Architect in making the Bidding Documents available on the above terms, do so only for the purpose of obtaining bids on the Work and do not confer a license or grant for any other use.

3.2 Interpretation or Correction of Bidding Documents

3.2.1 Bidders shall promptly notify the Architect of any ambiguity, inconsistency or error which they may discover upon examination of the Bidding Documents or of the site and local conditions.

3.2.2 Bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Architect at the pre-bid conference to reach him at least ten days prior to the date for receipt of bids.

3.2.3 Any interpretation, correction or change of the Bidding Documents will be made by Addendum. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding, and bidders shall not rely upon such interpretations, corrections and changes.

3.3 Substitutions

3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

3.3.2 No substitution will be considered unless written request for approval has been submitted by the proposer and **has been received by the Architect at least seven (7) days prior to the date for receipt of bids.** Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including model numbers, drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final. **All manufacturer's information shall be mailed or emailed. <u>Absolutely no "faxed" information or request shall be considered.</u>**

3.3.3 If the Architect approves any proposed substitution, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

3.4 Addenda

3.4.2 Addenda will be posted and made available from TA²G (The Architecture Alliance Group).

3.4.2 Printed Copies are not available from the Architect but arrangements can be made to obtain them through most reprographic firms. Plan holders are responsible for their own reproductive costs during construction.

3.4.3 Addenda shall not be issued within a period of seventy-two (72) hours prior to the advertised time for the opening bids, excluding Saturdays, Sundays, and any other legal holidays; however, if the necessity arises to issue and addendum modifying plans and specifications within the seventy-two-hour (72) period prior to the advertised time for the opening of bids, then the opening of bids shall be extended seven to twenty-one days, without the requirement of re-advertising.

3.4.4 Each Bidder shall ascertain from the Architect prior to submitting his bid that he has received all Addenda issued, and he shall acknowledge their receipt on the Bid Form.

<u>ARTICLE 4</u>

BIDDING PROCEDURE

4.2 Bid Security – Not Required

4.3 Submission of Bids – Shall be submitted to Guidance for Behavioral Health.

ARTICLE 5

CONSIDERATION OF BIDS – NOT APPLICABLE

ARTICLE 6

POST-BID INFORMATION

6.1 Submissions

6.1.1 At the pre-construction conference, the Contractor shall submit the following information to the Architect.

6.11.1 A designation of the Work to be performed by the Contractor with his own forces.

6.1.1.2 A breakdown of the contract cost into the 16 Divisions of the C.S.I. No payments will be made to the Contractor until this is received. The proprietary names and the suppliers of principal items or systems of material and equipment proposed for the Work.

6.1.1.3 A list of names of all Subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work. This shall be required no later than three (3) business days after receipt of bids.

6.1.2 The Contractor will be required to establish to the satisfaction of the Architect and the Owner the reliability and responsibility of the proposed Subcontractors to furnish and perform the Work described in the Sections of the Specifications pertaining to such proposed Subcontractor's respective trades.

6.1.3 The Architect will notify the Contractor if either the Owner or the Architect, after due investigation, has reasonable and substantial objection to any person or organization on the Contractor's list of proposed Subcontractors. If there are objections, the Contractor shall submit alternative Subcontractor(s) for their approval.

6.1.4 Subcontractors and other persons and organizations proposed by the Bidder and accepted by the Owner and the Architect must be used on the Work for which they were proposed and accepted and shall not be changed except with the written approval of the Owner and the Architect.

ARTICLE 7

PERFORMANCE AND PAYMENT BOND – NOT REQUIRED

ARTICLE 8

FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

8.1 Form to be Used

8.11 Form of the contract to be used shall be Standard Form Of Agreement Between Owner And Contractor, AIA Document A101.

8.2 Award

8.2.1 Before award of the contract, the successful bidder shall furnish to the Owner a certified copy of the minutes of the corporation or partnership meeting which authorized the party executing the bid to sign on behalf of the Contractor.

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions modify, change, delete from or add to the General Conditions of the Contract for Construction, AIA Document A201, 2017 Edition. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

Articles, Paragraphs, Subparagraphs or Clauses modified or deleted have the same numerical designation as those occurring in the General Conditions.

ARTICLE 1

GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1. THE CONTRACT DOCUMENTS

In Subparagraph 1.1.1 delete the third sentence, and add the following sentence:

The Contract Documents shall include the Bid Documents as listed in the Instructions to Bidders and any modifications made thereto by addenda.

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE [REFER TO *R.S. 38:2317*]

1.5.1 Delete the first sentence of the paragraph.

1.5.1 In the third sentence: delete the remainder after the word “publication”.

ARTICLE 2

OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 Delete this paragraph.

2.2.2 In the first sentence, delete: all before “…the Owner shall secure…”

ARTICLE 3

CONTRACTOR

3.4 LABOR AND MATERIALS

3.4.2 Delete this paragraph.

3.4.3 Delete this paragraph and substitute with the following:
Contractor and its employees, officers, agents, representatives, and Subcontractors shall conduct themselves in an appropriate and professional manner, in accordance with the Owner's requirements, at all times while working on the Project. Any such individual who behaves in an inappropriate manner or who engages in the use of inappropriate language or conduct while on Owner's property, as determined by the Owner, shall be removed from the Project at the Owner's request. Such individual shall not be permitted to return without the written permission of the Owner. The Owner shall not be responsible or liable to Contractor or any Subcontractor for any additional costs, expenses, losses, claims or damages incurred by Contractor or its Subcontractor as a result of the removal of an individual from the Owner's property pursuant to this paragraph. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

3.7 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS (R.S. 40:1724[A])

3.7.1 Delete Subparagraph 3.7.1

3.7.2 In paragraph 3.7.2, replace the word "public" with the word "Owner".

Delete Subparagraph 3.7.5 and substitute the following:

3.7.5 If, during the course of the Work, the Contractor discovers human remains, unmarked burial or archaeological sites, burial artifacts, or wetlands, which are not indicated in the Contract Documents, the Contractor shall follow all procedures mandated by State and Federal law, including but not limited to L.R.S. 8:671 et seq., R.S. 49:213.1 et seq., and Sections 401 & 404 of the Federal Clean Water Act. Request for adjustment of the Contract Sum and Contract Time arising from the existence of such remains or features shall be submitted in writing to the Owner pursuant to the Contract Documents.

3.8 ALLOWANCES

Delete Subparagraph 3.8.1, 3.8.2, and 3.8.3 in their entirety and add the following new Subparagraph 3.8.1:

3.8.1 Allowances shall not be made on any of the Work unless indicated on construction documents and specifications. See Section 01025 – Allowances.

3.9 SUPERINTENDENT

3.9.1 Add the following to the end of the paragraph: Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

3.10.1 Add the following: For projects with a contract sum greater than $1,000,000.00, the Contractor shall include with the schedule, for the Owner's and Architect's information, a network analysis to identify those tasks which are on the critical path, i.e. where any delay in the completion of these tasks will lengthen the project timescale, unless action is taken. A revised schedule shall be submitted with each Application and Certificate for Payment. No payment will be made until this schedule is received.

3.10.3 Delete the word "…general…" Add the following: If the Work is not on schedule, as determined by the Architect, and the Contractor fails to take action to bring the Work on schedule, then the Contractor shall be deemed in default under this Contract and the progress of the Work shall be deemed unsatisfactory. Such default may be considered grounds for termination by the Owner for cause in accordance with 14.2.

3.10.4 Add the following: Submittal by the contractor of a schedule or other documentation showing a completion date for his Work prior to the completion date stated in the contract shall not impose any obligation or responsibility on the Owner or Architect for the earlier completion date.

3.10.5 Add the following: In the event the Owner employs a commissioning consultant, the Contractor shall cooperate fully in the commissioning process and shall require all subcontractors and others under his control to cooperate. The purpose of such services shall be to ensure that all systems perform correctly and interactively according to the provisions of the Contract Documents.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following: This requirement is of the essence of the contract. The Architect shall determine the value of these documents and this amount shall not be approved for payment to the Contractor until all of the listed documents are delivered to the Architect in good order, completely marked with field changes and otherwise complete in all aspects.

ARTICLE 4

ARCHITECT

4.1 GENERAL

Delete Subparagraph 4.1.1 and substitute the following:

4.1.1 The term Architect, when used in the Contract Documents, shall mean the prime Designer (Architect, Engineer or Landscape Architect), or his authorized representative, lawfully licensed to practice architecture, engineering or landscape architecture in the State of Louisiana, identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number.

4.1.3 Delete the words: "as to whom the Contractor has no reasonable objection and"

4.2 ADMINISTRATION OF THE CONTRACT

4.2.1 In the first sentence, delete the phrase: "the date the Architect issues the final Certificate for Payment" and replace with the phrase "final payment is due, and with the Owner's concurrence, from time to time during the one year period for correction of Work described in Section 12.2."

4.2.2 In the first sentence, after the phrase: "become generally familiar with"; insert the following: "and to keep the Owner informed about."

In the first sentence, after the phrase "portion of the Work completed", insert the following: "to endeavor to guard the Owner against defects and deficiencies in the Work,"

4.2.10 Add the following sentence to the end of Subsection 4.2.10:

There will be no restriction on the Owner having a Representative.

4.2.11 Add the following sentence to the end of Subsection 4.2.11:

If no agreement is made concerning the time within which interpretation required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretation until 15 days after written request is made for them.

4.2.14 Insert the following sentence between the second and third sentences of Subsection 4.2.14:

If no agreement is made concerning the time within which interpretation required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretation until 15 days after written request is made for them.

ARTICLE 5

SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

Delete Subparagraph 5.2.1, and substitute the following:

5.2.1 Unless otherwise required by the Contract Documents, the Contractor shall furnish at the Pre-Construction Conference, to the Owner and the Architect, in writing, the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. No Contractor payments shall be made until this information is received.

Delete Subparagraph 5.2.2 and substitute the following:

5.2.2 The Contractor shall be solely responsible for selection and performance of all subcontractors. The Contractor shall not be entitled to claims for additional time and/or an increase in the contract sum due to a problem with performance or non-performance of a subcontractor.

Delete Subparagraph 5.2.3 and 5.2.4 and add the following:

5.2.3 The contractor shall notify the Owner when a subcontractor is to be changed and substituted with another subcontractor.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

Delete Subparagraphs 5.4.1, 5.4.2 and 5.4.3

ARTICLE 7

CHANGES IN THE WORK

7.1 GENERAL

Add the following paragraph:

7.1.4 As part of the pre-construction conference submittals, the contractor is to submit the following prior to the commencement of Work:

Fixed job site overhead cost itemized with documentation to support daily rates. Bond Premium Rate with supporting information from the General Contractor's carrier. Labor Burden by trade for both Subcontractors and General Contractor. Internal Rate Charges for all significant company owned equipment.

Failure to submit this information as part of the pre-construction submittals shall prohibit the Contractor from claiming these items as costs on any change order issued on the project.

7.2 CHANGE ORDERS

Delete Subparagraph clause 7.2.1, and substitute the following paragraphs:

7.2.1 A Change Order is a written order to the Contractor prepared by the Architect and signed by the Owner and the Architect, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum or the Contract Time. Any reservation of rights, stipulation, or other modification made on the change order by the contractor will have no effect.

7.2.2 "Cost of the Work" for the purpose of Change Orders shall be costs required to be incurred in performance of the Work and paid by the Contractor and Subcontractors which shall consist of:

7.2.2.1 Wages paid direct labor personnel, delineating a labor burden markup for applicable payroll taxes, worker's compensation insurance, unemployment compensation, and social security taxes.

7.2.2.2 Cost of all materials and supplies, including the identification of each item and its cost including taxes.

7.2.2.3 Identify each necessary piece of machinery and equipment and its individual cost including taxes.

7.2.2.4 Increases in insurance premiums for those forms of insurance required by Article 11 of these Supplementary Conditions and only for those forms.

7.2.2.5 Bond costs.

Credit will not be required for Overhead and Profit.

7.2.3 Overhead and Profit - The Contractor and Subcontractor shall be due job-site and home office fixed overhead and profits on the Cost of the Work, but shall not exceed a total of 25% of the direct cost of any portion of Work:

The credit to the Owner resulting from a change in the Work shall be the sum of those items above, except credit will not be required for Overhead and Profit. Where a change results in both credits to the Owner and extras to the Contractor for related items, overhead and profit will only be computed on the net extra cost to the Contractor.

7.2.4 The cost to the Owner resulting from a change in the Work shall be the sum of: Cost of the Work (as defined at 7.2.2) and Overhead and Profit (as defined at 7.2.4), and shall be computed as follows:

7.2.4.1 When all of the Work is General Contract Work; 15% markup on the Cost of the Work.

7.2.4.2 When the Work is all Subcontract Work; 15% markup on the Cost of the Work for Subcontractor's Overhead and Profit, plus 10% markup on the Cost of the Work, not including the Subcontractor's Overhead and Profit markup, for General Contractor's Overhead and Profit.

7.2.4.3 When the Work is a combination of General Contract Work and Subcontract Work; that portion of the direct cost that is General Contract Work shall be computed per 7.2.4.1 and that portion of the direct cost that is Subcontract Work shall be computed per 7.2.4.2.

Premiums for the General Contractor's bond may be included, but after the markup is added to the Cost of the Work.

7.2.4.4 Subcontract cost shall consist of the items in 7.2.2 above plus Overhead and Profit as defined in 7.2.4.

7.2.5 Before a Change Order is prepared, the Contractor shall provide and deliver to the Architect the following information concerning the Cost of the Work, not subject to waiver, within a reasonable time after being notified to prepare said Change Order:

A detailed itemized list of labor, material and equipment costs for the General Contractor's Work including quantities and unit costs for each item of labor, material and equipment.

An itemized list of labor, material and equipment costs for each Subcontractor's and/or Sub-Subcontractor's Work including quantities and unit costs for each item of labor, material and equipment.

7.2.6 After a Change Order has been approved, no future requests for extensions of time or additional cost shall be considered for that Change Order.

7.2.7 The Contractor will be due extended fixed job-site overhead for time delays only when complete stoppage of Work occurs causing a contract completion extension, and the Contractor is unable to mitigate financial damages through replacement Work. The stoppage must be due to acts or omissions solely attributable to the Owner. In all cases the Contractor is to notify the Architect in writing as required by Article 15.1.2. Reasonable proof may be required by the architect that alternate Work could not be performed. Reasonable proof may be required by the Architect that the stoppage affected the Completion Date.

7.2.8 "Cost of the Work" whether General Contract cost or Subcontract cost shall not apply to the following:

Salaries or other compensation of the Contractor's personnel at the Contractor's principal office and branch offices.

Any part of the Contractor's capital expenses, including interest on the Contractor's capital employed for the Work.

Overhead and general expenses of any kind or the cost of any item not specifically and expressly included above in Cost of the Work.

Cost of supervision not specifically required by the Change Order.

7.2.9 When applicable as provided by the Contract, the cost to Owner for Change Orders shall be determined by quantities and unit prices. The quantity of any item shall be as submitted by the Contractor and approved by the Architect. Unit prices shall cover cost of Material, Labor, Equipment, Overhead and Profit.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.3 In the first sentence after following methods add: ", but not to exceed a specified amount."

7.3.7 Delete the following from .1 of the list: "fringe benefits required by agreement or custom,"

Delete the following from .4 of the list: "permit fees,"

Delete the following from .5 of the list: "and field office personnel"

7.3.9 Delete Subparagraph 7.3.9 and substitute the following:

Pending final determination of the total costs of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs.

ARTICLE 8

TIME

8.1 DEFINITIONS

Add the following:

8.1.5 The Contract Time shall not be changed by the submission of a schedule that shows an early completion date unless specifically authorized by change order.

8.2 PROGRESS AND COMPLETION

Add to Subparagraph 8.2.1 the following:

Completion of the Work must be within the Time for Completion stated in the Agreement, subject to such extensions as may be granted under Section 8.3. The

Contractor agrees to commence Work as described in the Written Notice to Proceed from the Owner and to substantially complete the project within the time stated in the Contract. The Owner will suffer financial loss if the project is not substantially complete in the time set forth in the Contract Documents. The Contractor and the Contractor's Surety shall be liable for and shall pay to the Owner the sum stated in the Contract Documents as fixed, agreed and liquidated damages for each consecutive calendar day (Saturdays, Sundays and holidays included) of delay until the Work is substantially complete. The Owner shall be entitled to the sum stated in the Contract Documents. Such Liquidated Damages shall be withheld by the Owner from the amounts due the Contractor for progress payments.

Delete Subparagraph 8.2.2

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 In the first sentence after the words Owner pending delete the words: "mediation and arbitration" and add the word: "litigation" and delete the last word: "determine" and add the following: "recommend, subject to Owner's approval of Change Order. If the claim is not made within the limits of Article 15, all right for future claims for that month are waived."

ARTICLE 9

PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Delete Subparagraph 9.2 and substitute the following:

9.2 At the Pre-Construction Conference, the Contractor shall submit to the Owner and the Architect a Schedule of Values prepared as follows:

9.2.1 The attached Schedule of Values Format shall be used. If applicable, the cost of Work for each section listed under each division, shall be given. The cost for each section shall include Labor, Materials, Overhead and Profit.

9.2.2 The Total of all items shall equal the Total Contract Sum. This schedule, when approved by the Architect, shall be used as a basis for the Contractor's Applications for Payment and it may be used for determining the cost of the Work in deductive change orders, when a specific item of Work listed on the Schedule of Values is to be removed. Once the Schedule of Values is submitted at the Pre-

Construction Conference, the schedule may not be modified without approval from the Owner and Architect.

9.3 APPLICATIONS FOR PAYMENT

Delete Subparagraph 9.3.1 and clause 9.3.1.1 and 9.3.1.2 and substitute the following:

9.3.1 Monthly, the Contractor shall submit to the Architect an Application & Certificate for Payment on the AIA Document G702-1992, accompanied by AIA Document G703-1992, and supported by any additional data substantiating the Contractor's right to payment as the Owner or the Architect may require. Application for Payment shall be submitted on or about the first of each month for the value of labor and materials incorporated into the Work and of materials, suitably stored, at the site as of the twenty-fifth day of the preceding month, less normal retainage as follows, per R.S. 38:2248:

9.3.1.1 Projects with Contract price up to $500,000.00 – 10% of the Contract price.

9.3.1.2 Projects with Contract price of $500,000.00, or more – 5% of the Contract price.

9.3.1.3 No payment will be made until the revised schedule required by Section 3.10.1 is received.

The normal retainage shall not be due the Contractor until after substantial completion and expiration of the forty-five day lien period and submission to the Architect of a clear lien certificate, consent of surety and invoice for retainage.

Delete Subparagraph 9.3.2 and substitute the following:

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. Payments for materials or equipment stored on the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, including applicable insurance.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Subparagraph 9.5.1.7: Delete the word "repeated".

Delete Subparagraph 9.5.3

9.6 PROGRESS PAYMENTS

Delete Subparagraph 9.6.1 and substitute the following:

9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment within twenty days.

9.6.2 Delete the phrase: "no later than seven days" from the first sentence.

After the end of the second sentence, add the following:

R.S. 9:2784 (A) and (C) require a Contractor or Subcontractor to make payment due to each Subcontractor and supplier within fourteen (14) consecutive days of the receipt of payment from the Owner. If not paid, a penalty in the amount of ½ of 1% per day is due, up to a maximum of 15% from the expiration date until paid. The contractor or subcontractor, whichever is applicable, is solely responsible for payment of a penalty.

9.6.4 Delete the first two sentences of Subparagraph 9.6.4 and add the following to the end of the Subparagraph:

Pursuant to La. R.S. 38:2242, when the Owner receives any claim of nonpayment arising out of the Contract, the Owner shall deduct 125% of such claim from the Contract Sum. The Contractor, or any interested party, may deposit security, in accordance with La. R.S. 38:2242.2, guaranteeing payment of the claim with the recorder of mortgages of the parish where the Work has been done. When the Owner receives original proof of such guarantee from the recorder of mortgages, the claim deduction will be added back to the Contract Sum.

9.7 FAILURE OF PAYMENT

Delete Subparagraph 9.7

9.8 SUBSTANTIAL COMPLETION: Delete this section and substitute the following:

9.8 SUBSTANTIAL COMPLETION

9.8.1 Substantial Completion is the stage in the progress of the Work when the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. <u>The Architect shall determine if the project is substantially complete in accordance with this Subparagraph not the Fire Marshal Granted Occupancy.</u>

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

9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work is substantially complete. A prerequisite to the Work being considered as substantially complete is the Contractor has executed the entire school restroom renovations. The entire school will be required to be complete for final substantial. Prior to inspection by the Architect, the Contractor shall notify the Architect that the project is ready for inspection by the State Fire Marshal's office or roofing manufacturer inspector. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use, the Contractor shall, before the Work can be considered as Substantially Complete, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

9.8.4 When the Architect determines that the project is Substantially Complete, he shall prepare a punch list of exceptions and the dollar value related thereto. The monetary value assigned to this list will be the sum of the cost estimate for each particular item of Work the Architect develops based on the mobilization, labor, material and equipment costs of correcting the item and shall be retained from the monies owed the contractor, above and beyond the standard lien retainage. The cost of these items shall be prepared in the same format as the schedule of values. At the end of the 45 day lien period payment shall be approved for all punch list items completed up to that time. After that payment, none of the remaining funds shall be due the contractor until all punch list items are completed and are accepted by the Architect. If the dollar value of the punch list exceeds the amount of funds, less the retainage amount, in the remaining balance of the Contract, then the Project shall not be considered as substantially complete. If funds remaining are less than that required to complete the Work, the Contractor shall pay the difference.

9.8.5 When the preparation of the punch list is complete the Architect shall prepare a Letter for Recommendation of Acceptance incorporating the punch list and submit it to the Owner. Upon approval of the Letter for Recommendation of Acceptance by Owner, the Architect will issue a Substantial Completion of the Building Contract which shall establish the Date of Substantial Completion. The Contractor will record the Substantial Completion with the Clerk of Court in the Parish in which the Work has been performed. If the Substantial Completion has not been recorded seven (7) days after issuance, the Owner may record the Acceptance at the Contractor's expense. All additive change orders must be processed before issuance of the Substantial Completion. The Owner will not be responsible for payment for any Work associated with change orders that is not incorporated into the contract at the time of the Substantial Completion.

9.8.6 Warranties required by the Contract Documents shall commence on the date of the Substantial Completion of the Work unless otherwise agreed to in writing by the Owner and Contractor. Unless otherwise agreed to in writing by the Owner and Contractor, security, maintenance, heat, utilities, damage to the Work not covered by the punch list and insurance shall become the Owner's responsibility on the Date of Substantial Completion.

9.8.7 If all punch list items have not been completed by the end of the thirty (30) day lien period, through no fault of the Architect or Owner, the Owner may hold the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not completed the punch list, through no fault of the Architect or Owner, the Owner may, at his option, contract to have the balance of the Work completed and pay for such Work with the unpaid funds remaining in the Contract sum. Finding the Contractor in default shall constitute a reason for disqualification of the Contractor from bidding on future state contracts. If the surety fails to complete the punch list within the stipulated time period, the Owner may not accept bonds submitted, in the future, by the surety.

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 Delete paragraph and substitute the following:

Partial Occupancy is that stage in the progress of the Work when a designated portion of the Work is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the designated portion of the Work for its intended use. The Owner may occupy or use any substantially completed portion of the Work so designated by separate agreement with the Contractor and authorized by public authorities having jurisdiction over the Work. Such occupancy or use may commence provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers the designated portion substantially complete the Contract shall prepare and submit a list to the Architect as provided under Subparagraph 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonable withheld.

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.1 After the first sentence, add the following:

If the Architect does not find the Work acceptable under the Contract Documents, the Architect shall make one additional inspection; if the Work is still not acceptable, the Architect, and each of the Architect's principal consultants, shall be paid <u>$175.00/hour</u> for their time at the project site, for each additional inspection, to be withheld from the unpaid funds remaining in the Contract sum. The payment shall be made by the Owner and deducted from the construction contract funds.

9.10.4 Replace with the following:

The making of final payment shall <u>not</u> constitute a waiver of claims by the Owner for the following:

9.10.4.1 Claims, security interests or encumbrances arising out of the Contract and unsettled;

9.10.4.2 Failure of the Work to comply with the requirements of the Contract Documents irrespective of when such failure is discovered; or

9.10.4.3 Terms of special warranties required by the Contract Documents.

ARTICLE 10

PROTECTION OF PERSONS AND PROPERTY

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.2 In the first sentence, between the words: "bearing on and safety", add the words: "the health and,"

10.3 HAZARDOUS MATERIALS

10.3.1 In the first sentence after (PCB) add: "or lead"

10.3.2 After the first sentence, delete all remaining sentences.

Add at the end: "The Contract time shall be extended appropriately."

10.4 EMERGENCIES

Delete Subparagraph 10.4 and substitute the following:

10.4 In an emergency affecting the safety of persons or property, the Contractor shall notify the Owner and Architect immediately of the emergency, simultaneously acting at his discretion to prevent damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency Work shall be determined as provided in Article 15 and Article 7.

ARTICLE 11

INSURANCE AND BONDS

Delete all of Paragraphs 11.1, 11.2 and 11.3 and substitute the following:

SEE ULM FRONT END DOCUMENTS INSURANCE REQUIREMENTS FOR NEW CONSTRUCTION

11.1 The Contractor shall purchase and maintain without interruption for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by the Contractor, its agents, representatives, employees or subcontractors. The duration of the contract shall be from the inception of the contract until the date of final payment.

The following insurance policies shall name the owner as an additional insured.

11.2.5 Builder's Risk

<u>The General Contractor is to provide Builders' Risk Insurance to protect the Owner</u>, Contractor, and their Subcontractors as their interest may appear. The policy is subject to $1000 deductible per claim for loss or damage which deductible will be paid by the Contractor.

Builder's Risk Insurance shall be in an amount equal to the greater of the fully-completed project value or the amount of the construction contract including any amendments and shall be upon the entire Work included in the contract. The policy shall provide coverage equivalent to the ISO form number CP 10 20, Broad Form Causes of Loss (extended, if necessary, to include the perils of wind, earthquake, collapse, vandalism/malicious mischief, and theft, including theft of materials whether or not attached to any structure). The policy must include architects' and engineers' fees necessary to provide plans, specifications and supervision of Work for the repair and/or replacement of property damage caused by a covered peril, not to exceed 10% of the cost of the repair and/or replacement.

Provide a copy of this policy to Owner for their files.

11.3.1.3 Builder's Risk

The policy must include an endorsement providing the following:
In the event of a disagreement regarding a loss covered by this policy which may also be covered by an Owner' self-insurance or commercial property policy, Contractor and its insurer agree to follow the following procedure to establish coverage and/or the amount of loss:

Any party to a loss may make written demand for an appraisal of the matter in disagreement. Within 20 days of receipt of written demand, the Contractor's insurer and either ORM or its commercial insurance company shall <u>each</u> select a competent and impartial appraiser and notify the other of the appraiser selected. The two appraisers will select a competent and impartial umpire. The appraisers will then identify the policy or policies under which the loss is insured and, if necessary, state separately the value of the property and the amount of the loss that must be borne by each policy. If the two appraisers fail to agree, they shall submit their differences to the umpire. A written decision by any two shall determine the policy or policies and the amount of the loss. Each insurance company agrees that the decision of the appraisers and the umpire if involved will be binding and final and that neither party will resort to litigation. Each of the two parties shall pay its chosen appraiser and bear the cost of the umpire equally.

ARTICLE 12

UNCOVERING AND CORRECTION OF WORK

12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

At the end of the paragraph, add the following sentences: "If the Contractor fails to correct Work identified as defective within a thirty (30) day period, through no fault of the Designer, the Owner may hold the Contractor in default. If the Owner finds the Contractor in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not corrected the nonconforming Work, through no fault of the Architect or Owner, the Owner may contract to have nonconforming Work corrected and hold the Surety and Contractor responsible for the cost, including architectural fees and other indirect costs. If the Surety fails to correct the Work within the stipulated time period and fails to meet its obligation to pay the costs, the Owner may elect not to accept bonds submitted in the future by the Surety.

Finding the Contractor in default shall constitute a reason for disqualification of the Contractor from bidding on future state contracts.

12.2.2 AFTER SUBSTANTIAL COMPLETION

12.2.2.1 At the end of the paragraph delete the last sentence and add the following sentences: If the Contractor fails to correct nonconforming Work within a thirty (30) day period, through no fault of the Architect or Owner, the Owner may hold the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not corrected the nonconforming Work, through no fault of the Architect or Owner, the Owner may contract to have the nonconforming Work corrected and hold the Surety responsible for the cost including architects fees and other indirect costs. Corrections by the Owner shall be in accordance with Section 2.4. If the Surety fails to correct the nonconforming Work within the stipulated time period and fails to meet its obligation to pay the costs, the Owner may not accept bonds submitted, in the future, by the Surety.

12.2.2.1 At the end of the paragraph delete the last sentence and add the following sentences: If the Contractor fails to correct Work covered by warranties within a thirty (30) day period, through no fault of the Architect or Owner, the Owner may hold the Contractor in default. If the Owner finds the Contractor is in default, the Surety shall be notified. If within thirty (30) days after notification, the Surety has not corrected the warranty Work, through no fault of the Architect or Owner, the Owner may contract to have the warranty Work corrected and hold the Surety responsible for the cost including architects fees and other indirect costs. Corrections by the Owner shall be in accordance with Section 2.4. If the Surety fails to correct the warranty Work within the stipulated time period and fails to meet its obligation to pay the costs, the Owner may not accept bonds submitted, in the future, by the Surety.

ARTICLE 13

MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Delete all after the word “located”.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 In the second sentence, delete “Except as … 13.2.2”

Delete paragraph 13.2.2

13.4 RIGHTS AND REMEDIES

Add the following clause 13.4.3

13.4.3 The Fourth Judicial Court in and for the Parish of Ouachita, State of Louisiana shall have sole jurisdiction and venue in any action brought under this contract.

13.5 TESTS AND INSPECTIONS

In Subparagraph 13.5.1, delete the second sentence and substitute the following:

The Contractor shall make arrangements for such tests, inspections and approvals with the Testing Laboratory provided by the Contractor, and the Contractor shall bear all related costs of tests, inspections and approvals.

Delete the last sentence of Subparagraph 13.5.1

13.6 INTEREST

Delete Paragraph 13.6

13.7 TIME LIMITS ON CLAIMS

Delete Paragraph 13.7 (See L.R.S. 38:2189).

ARTICLE 14

TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

Delete clause 14.1.1.4

In Subparagraph 14.1.3, after the word “profit” add the following: “for Work completed prior to stoppage”.

14.2 TERMINATION BY THE OWNER FOR CAUSE

Add the following clause:

14.2.1.5 Failure to complete the punch list within the lien period as provided in 9.8.7.

14.2.3 Add the following sentence:

Termination by the Owner shall not suspend assessment of liquidated damages against the Surety.

14.2.5 Add the following Subparagraph:

If an agreed sum of liquidated damages has been established, termination by the Owner under this Article will not relieve the Contractor and/or surety of his obligations under the liquidated damages provisions and the Contractor and/or surety shall be liable to the Owner for per diem liquidated damages.

ARTICLE 15

CLAIMS AND DISPUTES

15.1 CLAIMS

In the first sentence of Subparagraph 15.1.1, after the word "money", add the phrase: "extension of time,"

15.1.2 Add the following to the end of the paragraph: A Reservation of Rights and similar stipulations shall not be recognized under this contract as having any effect. A party must make a claim as defined herein within the time limits provided.

15.1.3 In the second sentence of the Subparagraph, delete "the decisions of the Initial Decision Maker" and replace with: "his/her decision".

Delete Paragraph 15.1.5.2 and substitute the following:

If adverse weather conditions are the basis for a claim for additional time, the Contractor shall document that weather conditions had an adverse effect on the scheduled construction. An increase in the contract time due to weather shall not be cause for an increase in the contract sum. At the end of each month, the Contractor shall make one Claim for any adverse weather days occurring within the month. The Claim must be accompanied by sufficient documentation evidencing the adverse days and the impact on construction. Failure to make such Claim within twenty-one (21) days from the last day of the month shall prohibit any future claims for adverse days for that month.

15.1.5.3 Add the following Subparagraph:

The following are considered reasonably anticipated days of adverse weather on a monthly basis:

January	11 days	July	6 days
February	10 days	August	5 days
March	8 days	September	4 days
April	7 days	October	3 days
May	5 days	November	5 days
June	6 days	December	8 days

The Contractor shall ask for total adverse weather days. The Contractor must ask the same month of adverse weather days with his application of payment. Any other days will not be accepted. The Contractor's request shall be considered only for days over the allowable number of days stated above.

Note: Contract is on a calendar day basis.

15.2 INITIAL DECISION

15.2.1 In the second sentence, delete the word "will" and replace with: "shall always".

In the second sentence, delete the phrase: "unless otherwise indicated in the Agreement."

In the third sentence, delete the word "mediation" and replace with: "litigation".

In the third sentence, delete: "unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered."

15.2.5 In the middle of the first sentence, delete all after the phrase: "rejecting the Claim".

In the second sentence, delete the phrase: "and the Architect, if the Architect is not serving as the Initial Decision Maker."

In the third sentence, delete all after: "binding on the parties" and add the following: "except that the Owner may reject the solution or suggest a compromise or both."

15.2.6 Delete Paragraph.

Delete Subparagraph 15.2.6.1

15.3 MEDIATION

Delete Article 15.3

15.4 ARBITRATION

Delete Article 15.4

15.5 EQUAL OPPORTUNITY (Add this Section)

15.5.1 The Contractor and all Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex or national origin. The Contract shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of nondiscrimination.

15.5.2 The Contractor and Subcontractor shall, in all solicitations or advertisement for employees placed by them or on their behalf, state that qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: Guidance for Behavioral Health
1204 Stubbs Avenue
Monroe, Louisiana 71201

A New Building For
Guidance for Behavioral Health
1206 Stubbs Avenue
Monroe, Louisiana 71201

BID FOR: ____

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by:
<u>(TA2G) The Architecture Alliance Group, LLC</u> and dated: <u>December 2025.</u>

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) ____ .

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:

____Dollars ($ ____________________)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1: **Not Applicable** *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

____Dollars ($ ____________________________)

Alternate No. 2: Not Applicable *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

____Dollars ($ ____________________________)

Alternate No. 3: Not Applicable *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

____Dollars ($____________________________)

NAME OF BIDDER: ____

ADDRESS OF BIDDER:____

____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: ____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: ____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: ____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: ________________________________

DATE: ______________________

<u>THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM</u>:

* The <u>Unit Price Form</u> shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

**** A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

GEOTECHNICAL EXPLORATION

PROPOSED GUIDANCE FOR BEHAVIORAL HEALTH
OFFICE BUILDING
MONROE, LOUISIANA
FILE NO. G25-03-047

Prepared for

GLOBAL LABORATORIES
105 PARKWEST DRIVE
WEST MONROE, LOUISIANA 71291

GOLDMAN GEOTECHNICAL CONSULTING, LLC

Taylor M. Goldman, PE
Member/Principal
(870) 904-2778

GOLDMAN
GEOTECHNICAL CONSULTING
LLC

3841 Industrial Circle, Suite 100
Bossier City, LA 71112
goldmangeotech@gmail.com
goldmangeotech.com

April 29, 2025

Mr. Jimmy Kent
Global Laboratories
105 Parkwest Drive
West Monroe, Louisiana 71291

RE: Geotechnical Exploration
Proposed Guidance for Behavioral Health Office Building
Monroe, Louisiana
File No. G25-03-047

Dear Mr. Kent:

This office is pleased to transmit our geotechnical engineering services report for the above referenced project. The attached report presents the results of site investigations, laboratory testing, and engineering analysis and recommendations.

We appreciate the opportunity to provide our services to you and look forward to serving as your geotechnical consultant throughout this project. Please do not hesitate to contact this office if you have any questions regarding the information presented or if we may be of further service.

Sincerely,

Goldman Geotechnical Consulting, LLC

Taylor M. Goldman, PE
Member/Manager

STATE OF LOUISIANA
TAYLOR M. GOLDMAN
License No. 39999
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
4/29/25

GEOTECHNICAL EXPLORATION
PROPOSED GUIDANCE FOR BEHAVIORAL HEALTH BUILDING
MONROE, LOUISIANA

PROJECT DESCRIPTION

This report presents the results of the geotechnical exploration performed for a proposed office building for Guidance for Behavioral Health in Monroe, Louisiana. The site is located on the southeastern side of Stubbs Avenue at 1206 Stubbs Avenue. The site is relatively flat with apparent elevation variations on the order of one (1) foot from the southeast to northwest. The lot is generally vegetated with regularly maintained grass and/or weeds with some mature trees along the back property line. The construction is proposed to be comprised of a two (2) story office structure with offices, restrooms, lobby, conference rooms, and a break room with access drives and parking areas. The approximate locations of the soil borings are indicated on the attached Boring Location Diagram. The purpose of this investigation was to develop site grading, foundation, and pavement recommendations based on the subsurface investigation.

The building is anticipated to be constructed with either wood or light metal frame, metal wall panels and/or brick veneer for exterior walls, and a slab on grade. Anticipated wall loads will be on the order of three (3) to four (4) kips per linear foot with possible maximum column loads on the order of sixty (60) kips. Based on preliminary observations of the site, it is anticipated that the final building elevation will be established through placement of approximately one (1) foot to two (2) feet of fill placement, following stripping, to facilitate positive site drainage. It is anticipated that the proposed pavement areas will be established either near the existing grades at the time of the field operations or through minor fill placement.

GENERAL

The study was authorized by Global Laboratories vie email on March 26, 2025. The purpose of the investigation was to evaluate the general subsurface conditions and develop recommendations for the design of the foundation system(s) of the proposed building, pavement sections, and subgrade preparation based on the subsurface investigation. The study included drilling sample borings across the site, performing laboratory testing, and engineering analysis of the subsurface conditions. The field and laboratory investigations included in this report have been conducted in accordance with applicable standards and procedures set forth in ASTM Standards.

FIELD OPERATIONS

The subsurface conditions were evaluated by advancing three (3) intermittent sample borings on April 2, 2025. The number and depth of the borings performed were specified by the design professional. Boring locations were selected by the design professional and staked in the field by representatives of this office. An illustration of the approximate locations of the borings is provided on the attached Boring Location Diagram. Descriptive terms and symbols used on the logs are in accordance with the Unified Soil Classification System. Surface elevations at the borehole locations were not supplied prior to field operations.

A track mounted auger drill rig was used to advance the test borings. Intermittent undisturbed samples were obtained in the following manner. Standard penetration tests were performed in accordance with ASTM procedures. This test is conducted by recording the number of blows required for a one hundred forty (140) pound hammer falling thirty (30) inches to drive a split spoon sampler eighteen (18) inches into the substrata. Depths at which split spoon samples were taken are indicated by two (2) crossed lines in the “Samples” column on the Log of Boring. The number of blows required to drive the sampler for each 6-inch increment were recorded. The penetration resistance is the number of blows required to drive the split spoon sampler the final twelve (12) inches of penetration. Information related to the penetration resistance is presented under the “Field Data” head of the Log of Boring. All samples were extruded in the field, sealed to maintain in-situ conditions, and packaged for transport to the laboratory for additional testing.

Water observations were recorded during the drilling operations and again in the open boreholes upon completion of the field services to evaluate ground water conditions. All borings were backfilled at completion of the field operations.

LABORATORY TESTING

Upon return to the laboratory all samples were visually logged in accordance with the Unified Soils Classification System. Selected samples were subjected to standard laboratory tests under the supervision of a geotechnical engineer to verify classification and to determine pertinent engineering properties of the substrata. The results of laboratory testing and soil classifications are tabulated on the attached Logs of Boring. Samples obtained during our field studies and not consumed by laboratory testing procedures will be retained for a period of thirty (30) days. Arrangements for storage beyond that period must be made in writing with this office.

SUBSURFACE CONDITIONS

The subsurface stratigraphy is comprised of three (3) generalized strata. The surficial stratum encountered in the upper two (2) feet of boring B-3 is comprised of firm gray and brown clayey sand with trace gravel. The clayey sand exhibits low plasticity, low shear strength, and high compressibility. The surficial stratum encountered in B-1 and B-2, as well as the stratum underlying the surficial clayey sand in B-3, is comprised of soft to medium stiff brown and gray lean clay to silty clay with trace sand and gravel fractions to approximately thirteen (13) feet depth. The lean clay and silty clay soils exhibit low to moderate plasticity, low shear strength, and high compressibility. Due to the potential silt fractions encountered across the site, the low plasticity silty lean clay and silty clay soils may be considered to be moisture-sensitive. Consequently, these soils may tend to “pump” or yield upon saturation and disturbance. The lower stratum encountered in the borings is comprised of soft to very soft gray and brown fat clay to the twenty (20) feet termination depth. The fat clay soils exhibit moderately high to high plasticity, low shear strength, and high compressibility. Additionally, the fat clay soils are classified as volumetrically unstable, possessing moderate to moderately high susceptibility to shrink and swell with variations in moisture content.

The subsurface descriptions provided in this section are of a generalized nature to highlight the major stratification features and material characteristics. For a detailed description of the subsoil stratification refer to the soil profile located on the attached Logs of Boring.

Subsurface water was encountered in all three (3) borings at depths ranging between approximately six (6) and seven (7) feet during drilling operations. The water levels were measured at depths between approximately two and a half (2.5) and four and a half (4.5) feet upon completion of the field operations. Additionally, the borehole walls collapsed at depths between approximately four and a half (4.5) and five and a half (5.5) feet upon completion of drilling operations. Based upon site topography, subsurface stratigraphy, and anticipated construction techniques required for this project, groundwater is not anticipated to present any significant problems during the construction phase of the project. However, the depth of perched water and shallow groundwater is influenced by seasonal moisture variations. Consequently, the depth to shallow subsurface water should be verified prior to the start of construction of the project.

SEISMIC DESIGN CONSIDERATIONS

The International Building Code, 2021 edition requires the design of structures must consider dynamic forces resulting from seismic events. These forces are dependent upon the magnitude of the earthquake event as well as the properties of the soils that underlie the site. As part of the procedure to evaluate seismic forces, the code requires the evaluation of the Seismic Site Class, which categorizes the site based upon the characteristic of the subsurface profile within the upper 100 feet of the ground surface. To define the Site Class for this project we have interpreted the results of the test borings drilled within the project site and estimated appropriate soil properties below the base of the borings to a depth of 100 feet as permitted by the code. The estimated soil properties were based upon our experience with subsurface conditions in the general site area. Based upon this evaluation, the subsurface conditions within the site vary between characteristics of a Site Class “D” (stiff soil profile) as defined in Table 1613.5.2 of the building code.

ANALYSIS AND RECOMMENDATIONS

Shallow Foundation System

Based on the site topography and visual observations, it is anticipated that site grading for the proposed structure will include placement of one (1) foot to two (2) feet of select fill material to establish finish floor elevation and to facilitate proper drainage. The potential vertical movements (PVM) are calculated to be between 0.17 and 0.31 inches. Therefore, with the analysis of the field and laboratory program and potential site grading, a shallow foundation system in conjunction with a uniform thickness of select fill material may be utilized for support of the proposed structure. Select fill material should meet the general requirements for type and placement as stated in the Site Preparation section of this report and should extend a minimum of five (5) feet beyond the edge of the slab. Additionally, the building pad should be cut as necessary to place a uniform thickness of any necessary select fill material. Either continuous footings and/or isolated spread footings are feasible for this site. The base of the footings should be placed in properly prepared select fill material or in-situ lean clay and/or clayey sand soils as per the Site Preparation section of this report at a depth of approximately eighteen (18) inches to two (2) feet below the final adjacent grade.

An allowable bearing pressure of 1,600 psf can be used for the design of continuous footings placed in the previously described strata. The bearing value contains a factor of safety on the order of two (2). A minimum footing width of eighteen (18) inches should be maintained for all steel reinforced continuous footings as protection against isolated shear failure or isolated consolidation of the previously constructed select fill.

Isolated spread footings may be considered for support of interior columns or other areas of concentrated load. The base of the spread footings should be placed in the previously described strata. An allowable pressure of 1,800 psf can be used to proportion all spread footings. The bearing value contains a factor of safety on the order of two (2). All spread footings should be designed with a minimum base width of twenty-four (24) inches.

Lateral resistance to sliding will be provided by sliding resistance and passive earth pressure on the edge of the foundation elements. Resistance to sliding may be evaluated using an ultimate friction factor (μ) value of 0.30 for concrete on soft to medium stiff lean clay, similar to the in-situ lean clay. Additionally, resistance to sliding may be evaluated using an ultimate friction factor (μ) value of 0.35 for concrete on medium stiff to stiff sandy lean clay, similar to the recommended select fill material. The ultimate passive pressure for properly prepared native subgrade and/or select fill material will be on the order of 300 to 320 pounds per square feet per foot. An appropriate factor of safety should be applied to the above values to obtain the allowable lateral resistance of the foundation system. Resistance to uplift will be provided by the weight of soil above the proposed footings. The in-place unit weight of the compacted select fill material and/or in-situ soils is approximately 115 to 125 pcf.

The base of all foundation excavations should be free of water and loose soil prior to placing concrete. The concrete should be placed as soon as possible after excavation to minimize bearing soil disturbance. Should the soils at the bearing elevation become excessively dry, disturbed, or saturated, the affected soils should be removed prior to placement of concrete.

Based on the anticipated site grading and site preparation efforts, it is anticipated that a minimum uniform thickness of twelve (12) inches of select fill will be placed beneath the top of subgrade elevation, which will minimize the potential for differential movement beneath the slab. The recommended select fill material possesses a low susceptibility to shrink and swell with variations in moisture content. Subsequently, the slab, whether it be conventionally reinforced or reinforced with post-tension cables, for the proposed structure can be placed directly on the properly placed select fill material or in-situ subgrade. Slabs, which are placed at grade, should be stiffened and reinforced to tolerate potential differential movements between the periphery and the interior portions of the slabs associated with consolidation of select fill material or isolated undiscovered soft strata.

Care should be taken to shape the site such that water does not pond around the structure during construction. When the structure is complete, the ground surface should slope away from the structure and all roof runoff should be collected in a gutter system and piped away from the structure, preferably onto paved areas or into subsurface drainage systems before discharging.

Alternate Shallow Foundation Considerations

If desired, a form of ground improvements, such as a system of Rammed Aggregate Piers (RAP), may be considered if the bearing capacity requires improvement. The design of this type of ground improvement system is typically performance based and proprietary to a specialty design-build contractor, such as Geopier®. RAP systems can be a cost-effective foundation solution to support settlement sensitive structures while providing an increased allowable bearing capacity. The ramming process used in Geopier® systems increases the lateral stress in surrounding soils, theoretically resulting in stiffening the stabilized composite soil mass. RAP elements have been utilized to reinforce good to poor soils, including soft to stiff clay as is present on this site. Engineers, such as those at Geopier®, would evaluate the site based on the field and laboratory test data provided in this report and their experience working with similar subsurface stratigraphy. With this information, a recommended bearing capacity for shallow foundations constructed on an RAP system will be provided. GGC does not warranty the design of a potential RAP system and is only recommending this be considered as a potentially viable method of increasing allowable bearing capacity at this site, if necessary.

Deep Foundation System

If foundation loads become too significant or construction techniques become too stringent for shallow foundations to be feasible, the foundation loads may be supported by a deep foundation system. Due to the relatively weak overburden soils and shallow groundwater, the typical deep foundation system of drilled and cast-in-place concrete piers does not seem the most feasible deep foundation system. Consequently, it is recommended that helical foundation piers be considered. Helical piers can be relatively easily installed with limited access, and the amount of spoils produced during the installation process should be minimal. Additionally, the presence of shallow groundwater is not a limitation concerning the installation of the piers. The helical pier foundation system should be designed by a professional engineer experienced in helical pier design and installed by an experienced contractor. Helical piers manufactured from galvanized steel should be utilized to prevent corrosion. With helical pier foundations elements, lateral resistance is generally achieved through depth and multiple piers. Additionally, greater lateral and/or uplift resistance, as well as vertical load resistance, may be provided by utilizing grout around each pile or by installing battered piles. We recommend that a load test be performed on a helical pier of equivalent size and embedment as the designed production element to verify design resistance values.

If a deep foundation system is utilized, it is recommended that a minimum of twelve (12) inches of select fill material be placed as per the <u>Site Preparation</u> section of this report across the building pad areas to establish the final grade. The select fill placement and subgrade preparation should extend a minimum of five (5) feet outside the building footprint. The recommended select fill material possesses a low susceptibility to shrink and swell with variations in moisture content. Consequently, the slab for the structure can be placed directly on the properly prepared select fill material. A slab placed at grade should be stiffened and reinforced to tolerate potential differential movements between the periphery and interior portions of the slabs associated with consolidation of select fill material or isolated undiscovered soft strata.

Prior to placement of any select fill the subgrade should be prepared as specified in the Site Preparation section of this report. Care should be taken to shape the site such that water does not pond around the structures during construction. When each structure is complete, the ground surface should slope away from the structure and all roof runoff should be collected in a gutter system and piped away from the structure, preferably onto paved areas or into subsurface drainage systems before discharging.

SITE PREPARATION

Site preparation should begin with the removal of all organic laden soils within the construction area, as well as the removal of any mature trees within the construction area. A stripping depth on the order of six (6) to eight (8) inches below existing grades is expected to remove the organic laden soils. Additional excavation and backfill will be required for the removal of any necessary stumps and root systems and may be required due to soft and/or saturated strata or possibly foreign debris laden soils. Once all deleterious matter has been removed, provide drainage of the exposed subgrade by sloping grades and ditching.

Following stripping and cutting and prior to any fill or concrete placement, the exposed surface of areas to receive fill material or directly support foundation elements and/or pavement elements should be scarified to a minimum depth of twelve (12) inches and compacted to a minimum of ninety-five (95) percent of the maximum dry density determined by ASTM D-698 with the moisture content adjusted to within two (2) percent below to two (2) percent above optimum. Succeeding moisture and density controlling, the subgrade should be proof-rolled with a loaded tandem-wheel dump truck or equivalent equipment. Proof-rolling should be observed by a representative of the qualified construction material testing lab to verify stable subgrade conditions. All soft or loose soil encountered within the building area should be undercut, stabilized, processed, and recompacted or excavated and replaced with select fill, whichever is appropriate.

Place select fill in thin, essentially horizontal layers not exceeding eight (8) inches in loose thickness and compact to a minimum of ninety-five (95) percent of the maximum density established by ASTM D-698 and the moisture content maintained to within two (2) percent below to three (3) percent above optimum moisture content. All select fill should be sandy clay or clayey sand possessing a liquid limit no greater than thirty-five (35), a plasticity index ranging between five (5) and eighteen (18), and not greater than sixty-five (65) percent passing the No. 200 mesh sieve. Soils possessing a plasticity index less than five (5) or a percent passing the No. 200 sieve greater than sixty-five (65) should not be utilized as structural fill at this site without prior approval by the design professional.

PAVEMENT SECTIONS

The design of pavement sections for this site is based upon subsurface conditions inferred by the test borings, expected vehicle loading, and the anticipated site grading. It is anticipated that pavement subgrade will consist of either in-situ lean clay, in-situ clayey sand, and/or select fill material. The in-situ soils and the select fill material, as described in the Site Preparation section of this report, possess Unified Soil Classifications of CL, CL-ML, SC, and/or SC-SM and should yield a minimum CBR value on the order of five (5) and a corresponding modulus of subgrade reaction (k) of 110 pci if properly prepared. Subgrade preparation and necessary select fill placement should extend a minimum of twelve (12) inches beyond the edge of the pavement, where applicable.

It is anticipated that rigid pavements will be utilized for this site. However, for the benefit of comparing the first costs of construction, alternative flexible pavement sections have been provided in the following paragraphs. The following rigid pavement sections are provided for this project:

Automobile Only Parking and Drive Areas

6 inches Portland Cement Concrete
over
12 inches Density Controlled Select Fill Material
or
12 inches Density Controlled In-situ Subgrade

Channelized Heavy Truck Traffic and Access Drives

7 inches Portland Cement Concrete
over
4 inches of Density Controlled Aggregate Base
over
12 inches Density Controlled Select Fill Material
or
12 inches Density Controlled In-situ Subgrade

Portland cement concrete, with air entrainment admixture, should possess a minimum compressive strength of 3500 pounds per square inch at twenty-eight (28) days and should have weakened planes installed at **maximum** spacing of fifteen (15) feet. The depth of the weakened planes should be one-fourth (1/4) the pavement thickness.

The following flexible pavement sections are provided for this site:

Automobile Only Parking and Drive Areas

2 inches Hot Mixed Asphaltic Concrete
over
6 inches Crushed Stone Base Material
over
12 inches Density Controlled Select Fill Material
or
12 inches Density Controlled In-situ Subgrade

Channelized Heavy Truck Traffic and Access Drives

3 inches Hot Mixed Asphaltic Concrete
over
8 inches Crushed Stone Base Material
over
12 inches Density Controlled Select Fill Material
or
12 inches Density Controlled In-situ Subgrade

Hot Mixed Asphaltic Concrete shall consist of Asphaltic concrete as defined by section 502 of The Louisiana Standard of Specifications for Roads and Bridges issued by the Louisiana Department of Transportation and Development. For thickness requirements greater than two (2) inches, the total section shall consist of a minimum of two (2) inches of wearing course over the remaining thickness of base course asphaltic concrete.

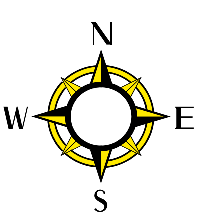
LIMITATIONS

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated locations and from any other information discussed in the report. This report does not reflect any variations which may occur across the site. The nature and extent of such variations may not become evident until construction. If variations appear evident it will be necessary to reevaluate the recommendations of this report.

It is recommended that the Geotechnical Engineer be given the opportunity to review the plans and specifications so comments can be made regarding the interpretation and implementation of our geotechnical recommendations in the design and specifications. Sound engineering judgement must be followed when applying the recommendations to designs, plans, and during construction monitoring.

This report has been prepared for the exclusive use of our client for specific applications to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either expressed or implied, are intended or made. In the event any changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed, and the conclusions of this report are verified in writing by the Geotechnical Engineer.

Note: The boring locations are not exact and are just intended to indicate the approximate locations of the subsurface investigation. The exact boring locations were selected in the field based on a site plan provided to this office.



GOLDMAN GEOTECHNICAL CONSULTING LLC

BORING LOCATION DIAGRAM PROPOSED GUIDANCE FOR BEHAVIORAL HEALTH OFFICE BUILDING MONROE, LOUISIANA		
	April 29, 2025	Project: G25-03-047

LOG OF BORING B-1

Goldman Geotechnical Consulting, LLC
3841 Industrial Circle, Suite 100
Bossier City, Louisiana 71112
Telephone: (318) 459-6696

CLIENT: Global Laboratories
PROJECT: Guidance for Behavioral Health Building
LOCATION: Monroe, Louisiana
NUMBER: G25-03-047

DATE(S) DRILLED: 4/2/25

DRILLING METHOD(S):
Continuous Flight Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 7 ft during drilling operations.
Water level recorded at 4.5 ft upon completion.
Borehole walls collapsed at approximately 4.5 ft.

SURFACE ELEVATION: Unknown

Depth (ft)	N: Blows/ft, P: Tons/sq ft, T: Blows, R: %, RQD: %	Moisture Content (%)	Liquid Limit LL	Plastic Limit PL	Plasticity Index PI	Dry Density Pounds/cu.ft	Compressive Strength (Tons/sq ft)	Failure Strain (%)	Confining Pressure (Pounds/sq in)	Minus No. 200 Sieve (%)	Description of Stratum
0											Soft brown and gray lean clay (CL)
	N = 3	25	35	19	16						
											-- Medium stiff below 2 ft
	N = 6	30								97	
5											Soft brown lean clay (CL) with trace sand
	N = 3	29	36	19	17					88	
											Soft brown silty clay (CL-ML) with trace gravel
	N = 3	30	25	18	7						
10											
											Soft gray fat clay (CH)
	N = 3	48	51	24	27						
15											
	N = 3	62	76	31	45					99	
20											Boring Terminated 20 ft

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:

LOG OF BORING B-2

Goldman Geotechnical Consulting, LLC
3841 Industrial Circle, Suite 100
Bossier City, Louisiana 71112
Telephone: (318) 459-6696

CLIENT: Global Laboratories
PROJECT: Guidance for Behavioral Health Building
LOCATION: Monroe, Louisiana
NUMBER: G25-03-047

DATE(S) DRILLED: 4/2/25

DRILLING METHOD(S):
Continuous Flight Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 6 ft during drilling operations.
Water level recorded at 2.5 ft upon completion.
Borehole walls collapsed at approximately 4.5 ft.

SURFACE ELEVATION: Unknown

DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
0–2		N = 4	26	45	19	26						Soft brown and gray lean clay (CL)
2–12		N = 4	25								98	Soft brown lean clay (CL) with trace sand
												-- Medium stiff below 4.5 ft
5		N = 6	28	27	16	11						
												-- Soft below 8 ft
10		N = 4	31								88	
12–20		N = 2	52	53	25	28					99	Very soft gray fat clay (CH)
15												
20		N = 2	56									
												Boring Terminated 20 ft

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:

LOG OF BORING B-3

Goldman Geotechnical Consulting, LLC
3841 Industrial Circle, Suite 100
Bossier City, Louisiana 71112
Telephone: (318) 459-6696

CLIENT: Global Laboratories
PROJECT: Guidance for Behavioral Health Building
LOCATION: Monroe, Louisiana
NUMBER: G25-03-047

DATE(S) DRILLED: 4/2/25

DRILLING METHOD(S):
Continuous Flight Auger

GROUNDWATER INFORMATION:
Groundwater encountered at 6 ft during drilling operations.
Water level recorded at 2.5 ft upon completion.
Borehole walls collapsed at approximately 5.5 ft.

SURFACE ELEVATION: Unknown

SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI	DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	DESCRIPTION OF STRATUM
													Firm gray and brown clayey sand (SC) with trace gravel
			N = 6	17	31	19	12					28	
													Soft brown lean clay (CL) with trace sand
			N = 4	25	35	18	17						
	5												-- Medium stiff below 5 ft
			N = 5	26								89	
													Soft brown silty lean clay (CL)
			N = 4	33	27	18	9						
	10												
													Soft gray and brown fat clay (CH)
			N = 3	43									
	15												
			N = 3	63	75	31	44						
	20												Boring Terminated 20 ft

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SECTION 01010 - SUMMARY OF WORK

PART ONE - GENERAL

WORK COVERED BY CONTRACT DOCUMENTS

The work of this Contract comprises the furnishing of all labor, materials, services, equipment, appliances, taxes and insurance required in conjunction with, or properly incidental to, the construction:

GUIDANCE for BEHAVORIAL HEALTH
1206 STUBBS AVENUE
MONROE, LOUISIANA 71201

Including but not limited to:

Temporary construction, furnishing and connections of utilities, construction of pavements, sidewalks, site drainage, general construction, electrical and mechanical, all in strict accordance with Construction Documents prepared by TA²G (The Architecture Alliance Group), 2002 Auburn Avenue, Monroe, Louisiana 71201.

The project consists of a general contractor constructing a new golf complex.

The awarded General Contractor will coordinate all his work with the Site General Contractor schedule and attend all project meetings that are scheduled.

CONTRACT

One (1) Contract will be awarded.

The General Contractor will provide the building permit, inspection fees, etc. with the Ouachita Parish requirements.

CONTRACTORS USE OF PREMISES

Use of site is exclusive and complete for execution of work as shown and designated on drawings and specified.

The awarded general contractor will work along with another Site General Contractor that will be providing the other construction items for their project. The awarded GC will coordinate all their work with the Site General Contractor. The awarded GC will attend project meetings with Owner, Architect, and Site General Contractor to discuss and coordinate their work.

The Contractor shall confine his operations and be responsible for all activities within these areas described above.

The Contractor will be required to go outside the Property Lines for work connected with the entrances, exits, and utilities.

Take precautions to protect all existing items shown on the drawings.
Do not unreasonably encumber site with materials and equipment.

The Contractor shall take full responsibility for protection and safekeeping of his materials and equipment stored at site.

The General Contractor shall have the full authority and right to fence, or otherwise secure around areas of new construction for purposes of providing the necessary safety and material security during the entire contract period. Access to aforementioned fenced area shall be by the Contractor's authorized personnel only and the Contractor shall have the right to deny access by unauthorized personnel and to provide watchman for enforcement of same.

PART TWO - PRODUCTS

MATERIALS AND PRODUCTS

All materials and products shall be new and free from defects. Only the materials and products specified in the contract Documents, Addenda or Change Order will be accepted on the job. SEE SECTION 01600 - MATERIALS AND EQUIPMENT.

PART THREE - EXECUTION

COMPLETION TIME

Contractor shall furnish sufficient forces, construction plant and equipment, and work such hours, including weekends and night shifts as may be necessary to insure completion of work in accordance with Construction Schedule. The project construction time is (240) Two Hundred Forty Days as described in the Instruction to Bidders.

Liquidated damages clause in Instruction to Bidders.

PROJECT COORDINATION

Contractor shall staff job with Project Manager qualified to perform construction scheduling, shop drawings, orderings materials and their timely delivery. Coordinate

Construction Operations included in various sections of the specifications to assure efficient and orderly installation of each part of the work. Coordinate Construction Operations included under different sections that depend on each other for proper installation, connection, and operation. Project manager assigned to the job shall not be disassociated with the project without the consent of Owner and Architect.

Contractor shall submit and furnish an updated Construction Schedule at each monthly meeting. Contractor's Application for Payment shall be withheld until contractor has submitted an updated schedule.

CONSTRUCTION SUPERVISION

Contractor shall staff job on-site with full time job Superintendent qualified to perform all job site coordination. The Job Superintendent shall remain at the job site the full duration of the project until all Punch List items are complete. Job Site Superintendent shall not be removed from the site without the consent of the Owner and Architect.

EXECUTION

All work and inspections of fire alarm, fire suppression, automatic sprinkler and fire extinguishing systems or portable fire extinguishers shall be performed by a State of Louisiana certified agent. (if applicable)

The contractor shall notify the District Office for inspection of all completed fire and/or smoke barrier walls before any construction is installed that would conceal such construction and prevent a proper inspection. Access to random selected areas may be required by the inspector at time of final inspection if this notification is not given.

Provide detailed instructive cut sheets of the fire penetration sealing system used to the inspector at time of inspection. Random selective sampling by the Contractor will be observed by the inspector.

TYPE OF WORKMANSHIP

Contractor shall perform work with craftsman knowledgeable and capable of delivering a quality built structure. All surfaces shall be erected true, straight, plumb and level. Any surface found to be unsuitable shall be corrected at Contractor's expense.

END OF SECTION 01010

SECTION 01025 – ALLOWANCES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements governing Contract allowances.

1 Allowances as set forth in the Specifications are to be used as compensation for items as set forth in this Section. The amounts listed in the schedule and/or Specifications are to be included in the base bid and shall be listed separately in the Schedule of Values and Application for Payment.

1.02 RELATED SECTIONS

A. A201 – General Conditions

1.03 ALLOWANCES

A. Use the allowances only as authorized for construction purposes and only by an approved schedule of values form that indicate the amounts to be charged to the respective allowance amount.

B. The allowance amount includes the Contractor and Subcontractor material, shipping, delivery, installation, profit, overhead and markup.

1.04 ALLOWANCE DISBURSEMENT

A. CONTRACTOR shall submit a request for allowance disbursement on a pay request line items schedule of values. Include all substantiating and/or required data along with the request.

PART 2 - PRODUCTS - (Not Applicable)

PART 3 - EXECUTION

3.01 SCHEDULE OF ALLOWANCES

1. Allow $6,000 for LVT Business logo in floor @ Lobby.
2. Allow $55,000 for Landscaping and Grass.

END OF SECTION 01025

SECTION 01200 - PROJECT MEETINGS

PART ONE - GENERAL

RELATED WORK SPECIFIED ELSEWHERE

Bidding requirements, general conditions of the contract, supplementary conditions, pertinent portions of sections in Division 1 of the Project Specifications and the drawings shall apply to the work of this Section.

WORK INCLUDED

Attendance by General Contractor and Subcontractors all listed conferences and meeting schedule by the Owner or Architect and all other concerned parties to coordinate work efforts and/or circumvent or solve any potential problems.

PRE-CONSTRUCTION CONFERENCE

After notification that the Contract has been executed, the Architect shall arrange with the Owner, School Staff and Contractor and conduct a pre-construction conference to be held at the project site. The Contractor shall be responsible to see that his principal subcontractors are in attendance and shall furnish to the Architect, Owner and User Agency:

1. The Schedule of Values
2. List of subcontractors and material suppliers
3. The construction schedule.

MONTHLY MEETING

The Contractor, principal subcontractors, and material suppliers shall meet with representatives of the Owner, and the Architect at the building site or at some other designated meeting place on campus monthly or as necessary to maintain an optimum degree of communication between all parties. Contractor shall submit and furnish an updated Construction Schedule at each monthly meeting. Contractor's Application for Payment shall be withheld until contractor has submitted updated schedule.

PART TWO – PRODUCTS; N/A

PART THREE – EXECUTION; N/A

END OF SECTION 01200

SECTION 01340 - SUBMITTALS & SHOP DRAWINGS

PART ONE - GENERAL

RELATED WORK SPECIFIED ELSEWHERE

Bidding and/or Negotiation Requirements, General Conditions of the Contract, Supplementary Conditions, pertinent portions of sections in Division 1 of the Project Specifications and the Drawings shall apply to the Work of this Section.

WORK INCLUDED

Submit Subcontractor Information Data, Shop Drawings, Product Data, Samples and Schedule of Values as required by Contract Documents in accordance with requirements specified herein.

SUBCONTRACTOR INFORMATION DATA

SCOPE: Furnish "Subcontractor Information Data" found under General Contractor Documents, as printed in these Specifications, within 48 hours of Bid Date.

SHOP DRAWINGS

Where Shop Drawings are required for submittal under individual sections, drawings shall be submitted and presented in clear and thorough manner as follows:

A. Drawings: Provide Shop Drawings with all information required in accordance with submittal requirements found under individual sections of Project Manual Specifications.
B. Details: Details shall be identified by reference to sheet and detail, schedule or room numbers shown on Contract Drawings.
C. Required Number: One (1) set in reproducible form (sepias) and four (4) sets of prints.

Architect will mark any corrections and comments on reproducible sepia and return mark up sepia and one (1) copy of prints to the contractors.

If directed, submit one (1) set of correct Shop Drawings in reproducible form (sepias).

Note: Begin no fabrication or work which requires submittals until the architect checks submittals and shop drawings for compliance with design requirements.

PRODUCT DATA

Where Product Data, brochures, descriptive literature, color charts, etc. are required for submittal under individual sections, submit as follows:

A. Preparation:
   1. Clearly mark each copy to identify pertinent products or models.
   2. Show performance characteristics and capacities.
   3. Show dimensions and clearances required.
   4. Show wiring or piping diagrams and controls.

B. Required Number: Submit six (6) copies.

SAMPLES

Where samples are required for submittal under individual sections, submit as follows:

A. Office Samples: Samples shall be of sufficient size and quantity to clearly illustrate.
   1. Functional characteristics of product, with integrally related parts and attachment devices.
   2. Full range of color, texture and pattern.

B. Required Number: Submit three (3) copies.

SUBMISSION REQUIREMENTS

Make Submittals promptly in accordance with approved schedule, and in such sequence as to cause no delay in Work.

Submittals shall contain the following information:

A. Date of submission and dates of any previous submissions.
B. Project Title and Architect's Commission Number.
C. Names of:
   1. Contractor
   2. Supplier
   3. Manufacturer
D. Identification of product by Project Manual Specification section number.
E. Field dimensions, clearly identified as such.
F. Applicable standards, such as A.S.T.M.
G. Identification of deviations from Contract Documents.
H. Contractor’s stamped, signed and dated as to his review and approval.
   (NOTE: Architect shall not review shop drawings until Contractor has made his review and approval.)

RESUBMISSION REQUIREMENTS

Make any corrections or changes in submittals required by Architect and resubmit until approved. Resubmission requirements are same as notes above for submissions with following addition requirements:

A. Shop Drawings and Product Data:
   1. Revise initial changes or data, and resubmit.
   2. Indicate any revisions on resubmittals.
   3. Indicate any changes which have been made other than those requested by Architect.

B. Samples: Submit new samples as required for initial submittal.

ARCHITECT DUTIES

Architect shall check submittals and shop drawings for “compliance with design requirements” only.

Architect to review submittals with reasonable promptness and in accord with schedule. Architect to approval stamp and initial or signature, and indicate approval of submittal or requirements for resubmittal. Architect to return to Contractor for distribution, or for resubmission.

PART TWO - PRODUCTS

NOT APPLICABLE

PART THREE - EXECUTION

NOT APPLICABLE

END OF SECTION 01340

SECTION 01400 - TESTING LABORATORY SERVICE

PART ONE - GENERAL

SELECTION & PAYMENT

The Owner will engage and pay for the services of an independent testing laboratory to perform inspection and tests of materials and construction as defined in the General Conditions.

TEST METHODS

Test and inspections shall be conducted in accordance with the latest standards of ASTM or other recognized authorities.

TEST REPORTS

The laboratory shall promptly submit written reports of each test and inspection made to the Owner, Architect, Engineer, Contractor and to such other such parties the Owner may specify.

EVENT OF LABORATORY TEST AND INSPECTIONS

The Architect will recommend to the Owner the type and number of tests to be performed on the project. The Contractor shall be advised of the number and type of test to be performed by the Testing laboratory. The Contractor is responsible for supplying concrete that meets the concrete design mixes specified under Division 3 of the Contract Document.

COOPERATION OF CONTRACTOR

The Contractor shall cooperate and:

A. Make available, without cost, samples of all materials to be tested in accordance with applicable standard specifications.

B. Furnish such nominal labor and sheltered working space as is necessary to obtain samples at the project.

C. Advise the laboratory of the identity of materials sources and instruct the suppliers to allow test or inspections by the laboratory.

D. Notify the laboratory sufficiently in advance of operations to allow for completion of initial tests and assignment of inspection personnel.

E. Notify the laboratory sufficiently in advance of cancellation of required testing operations. The Contractor shall be responsible to the laboratory for changes due to failure to notify if requirements for testing are cancelled.

PART TWO - PRODUCTS

NOT APPLICABLE

PART THREE - EXECUTION

NOT APPLICABLE

SECTION 01500 - CONSTRUCTION FACILITIES & TEMPORARY CONTROLS

PART ONE - GENERAL

RELATED WORK SPECIFIED ELSEWHERE

Bidding requirements, General Conditions of the Contract, Supplementary Conditions, pertinent portions of sections in Division 1 of the Project Specifications and the drawings shall apply to the work of this section.

WORK INCLUDED

Contractor shall visit the site and ascertain for themselves the existing conditions affecting the work.

PERSONAL INVESTIGATIONS

All Bidders on portions of this work must inform themselves fully as to the location of the improvements, location and availability of utilities, local ordinances, the use of streets, maintenance of lights, payment of fees and permits, and all other factors entering into the work so that they may have a comprehensive conception of all the conditions to be encountered, as lack of information will not relieve the Bidder of the responsibility that he assumes.

EXISTING UTILITIES AND SUB-SURFACE ITEMS

The drawings indicate all known existing above ground and sub-surface items and utilities in the vicinity of new construction. Other unknown items and utilities may be existing in the vicinity of construction, and neither the Owner or the Architect assume any responsibility for the failure to show such items or utilities, or to have shown the known items in their exact location. If these existing items or utilities interfere with the new construction, the Contractor shall at his option, either (1) abandon such existing items and install new utilities outside the building construction, or (2) replace existing utilities with new material acceptable to the Architect. Payment for this work shall be based on unit prices, if they are included in the bidding documents; if not included, payment shall be in accordance with paragraph 12.2.1 of the General Conditions of the Contract.

ARCHITECTURAL OBSERVATION

The work shall be carried on under the observation of the Architect and/or his authorized representative. No concrete shall be placed unless the architect or his representative is present. In general, no work shall be covered until it has been inspected and approved by the Architect And/or his representative.

INTERPRETATION OF DRAWINGS & SPECIFICATIONS

The Architect, as the originator of the Drawings and Specifications, shall be deemed the sole judge of the Drawings and Specifications, and the intent thereof; and his decision shall be final and binding on all parties concerned.

CORRELATION & INTENT

If there should be any discrepancy between scale and dimensions, figured dimensions shall over-ride scale dimensions. Although plans are drawn to scale, as indicated, and dimensions are given, in the case of remodeling or reconstruction work, or in fitting in the case of remodeling or reconstruction work, or in fitting work to measurements of existing conditions, the Contractor shall work to measurements of existing construction.

PERMITS AND LICENSES

The Contractor shall procure all necessary permits and licenses and shall observe and abide by all applicable laws, ordinances, and regulations by the Local and State governments and by the Federal government.

CODES

Whenever a specific code is referred to herein, then this code is hereby made a part of the Contract, inasmuch as any portion is applicable to this project, except as same may be herein modified.

PROJECT LIMIT LINES

Contract Limit Lines are indicated, in general, on the drawings. All work under this contract is limited within the general area as bounded by said Contract Limit Lines, Contractor shall not be required to go beyond these specific Contract Limit Lines unless the Designer determines that such action is required to complete the intent of the project documents, or access or connection to required utilities are required.

PROJECT SITE

The area under this Contract, and assigned to the Contractor for his operations, is indicated on the drawings by "Contract Limit Lines" and is hereby designated as the Project Site. The Contractor shall assume responsibility for the security and protection of these areas during the entire construction Contract period inclusive of protection of all materials, property, vegetation, and utilities within the Project Site.

Any material stored shall be stored within the "Contract Limit Lines", unless other areas are authorized for storage of the materials by Architect or Owner.

SPOIL MATERIALS

Spoil materials at project site free of debris and roots may be utilized for required backfill material. Location for deposition materials within Project Limit Lines shall be directed by the Architect. Contractor shall be responsible to remove from site and legally dispose of all debris and excess excavated material not required for fill.

DEBRIS

Contractor shall not be allowed to accumulate debris on site for an extended period of time. Contractor shall be responsible to remove from site and legally dispose of all accumulated debris daily.

ACCESS TO AREAS

Contractor shall have free and permissible vehicular and pedestrian access to project site at all times. See Construction Schedule Section 01010 Summary of Work.

SITE SECURITY

The General Contractor shall have the full authority and right to fence, or otherwise secure the around areas of new construction for purposes of providing the necessary safety and material security during the entire contract period. Access to aforementioned fenced area shall be by the Contractor's authorized personal only and the Contractor shall have the right to deny access by unauthorized personnel and to provide watchman for enforcement of same.

SEPARATE CONTRACTS

The Owner may award separate contracts on this project for equipment, furniture, etc. This Work as indicated and specified shall be included under a single base bid, and alternates as indicated.

CONSTRUCTION SCHEDULE

A twenty-four hour notice shall be given to the Owner prior to temporarily disconnecting any major utilities which would affect normal operation of any other structures on the campus.
See Section 01010 - Summary of Work - for required Construction Schedule.

TEMPORARY CONTROLS & PERMITS

SCOPE

Unless otherwise called for herein, all temporary facilities for construction purposes called for in the documents as well as other related temporary work necessary and required to complete the project shall be provided by contractor and they shall be removed by him at the completion of the project. Obtain and pay for all permits and licenses required by City, Parish, State and Federal authorities.

TEMPORARY SCAFFOLDS, STAGING AND SAFETY DEVICES

Provide, erect, maintain, and remove when no longer required; all scaffolding, staging, platforms, temporary runways, guards, bracing, shoring, sheet piling, lights, warning signs, fences, barricades, railings, covers, drop cloths, etc., as required by local, state, and federal codes, or laws, for the protection of property, workmen, and the public, both on and adjacent to the construction site. The construction, inspection and maintenance of the above items shall comply with all safety codes and regulations as applicable to the project. All temporary provisions shall be the responsibility of the General Contractor. Adequate provision shall be made to minimize the amount of noise and dust annoyance. Any damage caused by his operations shall be the responsibility of the General Contractor. Provide personal safety equipment for authorized visitors. Provide and maintain warning lights and signs as necessary to prevent damage or injury. Keep warning lights burning from dusk to dawn. Maintain all items in good, safe condition throughout the duration of the project.

Contractors bidding on this job are advised that the provisions of 40 U.S.C. 333, as implemented by the Regulations of the Secretary of Labor, 36, F.R. 7339-7410 apply to this Contract and the successful Bidder will be required to comply therewith.

TEMPORARY LIGHTING

Make the necessary arrangements and provide all temporary lighting required during the entire construction period.

Provide a minimum of three (3) watts per square foot of temporary lighting in each room to insure proper application and inspection of finishes. Lighting in each space shall be arranged to provide reasonably uniform overall lighting.

Permanent wiring and installed fixtures existing and/or new, may be used, provided they are adequately protected, cleaned and re-lamped with new lamps at time of inspection for substantial completion. All temporary lighting shall be kept in safe and operating condition throughout construction period.

COLD WEATHER PROTECTION AND TEMPORARY HEAT

Provide for all cold weather protection, temporary heat and fuel as necessary to carry on the work expeditiously during inclement weather to protect all work and materials against injury from dampness and cold, to dry out the building and to provide suitable working conditions for the installation and curing of materials, all until acceptance by the Owner.

TEMPORARY TOILET FACILITIES

Contractor shall provide and maintain an adequate number of temporary prefabricated chemical type toilets with proper enclosures as necessary for his use during construction. Keep such facilities in a sanitary condition, comply with all local and state health requirements and sanitary regulations, and remove same upon completion of the project, leaving the premises clean and sanitary.

TEMPORARY ELECTRICITY

The Owner will provide electricity during the construction period on the schools existing system. All connections are by General Contractor.

All necessary facilities, such as wiring, panel boards, outlets, switches, lamps, fuses, controls and accessories shall be provided by the Contractor. The materials used for temporary service shall not be used in the permanent system unless specific approval is given by the Architect. Contractor shall remove all temporary connections and items upon completion of project.

TEMPORARY WATER AND GAS

Contractor shall provide all required connections and materials, and shall remove same upon completion of the project.

SECURITY

Contractor shall be responsible for the guarding of the premises against theft, vandalism and unauthorized use and trespassing from beginning of construction until final acceptance of the project by the Owner.

PUMPING AND DRAINING

Keep working and storage areas free from water that could cause damage or that could interfere with progress of work.

Slope ground to drain surface water away from excavations and structures.
Pump or drain to designated points. Distribute discharge to prevent excessive erosion.
Replace eroded materials.

TEMPORARY FIELD OFFICE AND SHEDS

At all times, provide and maintain a watertight office for the use of the Architect, Contractor and Sub-Contractors. Provide temperature control during working hours as required by the season (air conditioning or heat). Office shall contain minimum of 200 sq. ft. of floor space with adequate lighting, file racks for storage of drawings, countertop (minimum 6'-0" x 2'-6"), storage shelves, two (2) stools and telephone. Provide lock with two (2) keys for Architect's use. Provide all necessary sheds with raised flooring for storage of equipment and materials. This office shall accommodate monthly meetings.

CLEANING

Remove temporary work when need for its use has passed.

Clean spaces that were occupied by temporary work. Remove debris, rubbish and excess materials from site. Burning or burying not permitted on site.

Repair damages caused by installation or use of temporary facilities.

END OF SECTION 01500

SECTION 01600 - MATERIALS AND EQUIPMENT

RELATED WORK SPECIFIED ELSEWHERE

Bidding Requirements, General Conditions of the Contract, Supplementary Conditions, pertinent portions of sections in Division 1 of the Project Specifications and the Drawings shall apply to the Work of this Section.

WORK INCLUDED

Provide materials and equipment that are indicated and/or specified to be incorporated into Work as follows:

A. Conform to applicable specifications and standards.
B. Comply with size, make, type, and quality indicated and/or specified or as specifically approved in writing by Architect.
C. Manufactured and Fabricated Products:
   1. Design, fabricate and assemble in accordance with best engineering and shop practices.
   2 Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
   3. Two or more items of same kind shall be identical and by same manufacturer.
   4. Products shall be suitable for service conditions
   5. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved by Architect in Writing.
D. Do not use materials or equipment for any purpose other than that for which it is designed or is specified.

MANUFACTURER'S SPECIFICATIONS & PRODUCT NUMBERS

The Contractor is hereby advised of the following information extracted from Act 803, of the 1980 Regular Louisiana Legislative Session:

1. The name of certain brands, makes, manufacturers and definite specifications are included in the Contract Documents to denote the quality standard of the article desired and does not restrict bidders to the specific brand, make, manufacturer, or specification named. It is set forth to convey to prospective bidders the general style, type, character, and quality of article desired.

2. When in these Contract Documents a particular brand, make of material, device, or equipment is shown or specified, such brand, make of material, device or equipment shall be regarded merely as a standard

3. If a potential supplier desires to submit for prior approval a particular product other than a product specified in the Contract Documents, he shall do so no later than seven (7) calendar days prior to the opening of bids. Within three (3) days, exclusive of holidays and week-ends, after such submission, the Architect shall furnish to both the public entity and the potential supplier written approval or denial of the product submitted.

MANUFACTURER'S INSTRUCTIONS

When Contract Documents require that installation of various products used in Project be installed in compliance with manufacturer's printed instructions, Contractor shall execute that portion of the Work as follows:

A. Obtain and distribute copies of such instructions to parties involved in each products installation including two (2) copies to Architect. Maintain one set of complete instructions at jobsite during installation. Include one complete set of instructions with Project Record Documents
B. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformance with specified requirements.
   1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Architect for further instructions.
   2. Do not proceed with Work without clear instructions.
   3. Perform Work in accordance with manufacturers instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.
C. Manufacturer's printed installation instructions which, when specified and approved by Architect, shall become basis for inspecting and accepting or rejecting actual installation methods used on Work.

TRANSPORTATION AND HANDLING

Arrange deliveries of products in accordance with construction schedules, coordinate with Work and condition at Project site as follows:

A. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
B. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and that they are undamaged.
C. Provide equipment and personnel to handle product by methods to prevent soiling or damage to products or packaging.

STORAGE AND PROTECTION

Store products in accordance with manufacturer's instructions, with seals and labels intact and legible, as indicated in various other sections and as follows:

A. Store products subject to damage by elements in weathertight enclosures.
B. Main temperature and humidity within ranges covered by manufacturer's instructions.
C. Provide exterior storage as follows:
   1. Store fabricated products above ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
   2. Store loose granular materials in well-drained area on solid surfaces to prevent mixing with foreign matter.
D. Arrange storage in manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions and that products are free from damage or deterioration.

Provide substantial covering as necessary to protect installed products from damage from traffic and/or subsequent construction operations. Remove when no longer needed.

GUARANTEE

The Contractor shall be required to guarantee all materials and workmanship furnished by himself or his subcontractors against any defects that may develop or be discovered within a period of one (1) year from the date of Final Acceptance.

Contractor shall promptly make any such corrections when called upon to do so by the Architect and/or Owner. Should the Contractor fail to so remedy any such defects within a reasonable length of time, the Owner shall have the right to make these corrections and charge same to the Contractor, and the Contractor by signing the Contract acknowledges that such charges are just, due and payable.

END OF SECTION 01600

SECTION 01700- CONTRACT CLOSEOUT

GENERAL

Comply with requirements in Divisions 1 - 16 and the various Technical Sections of the Specifications for Administrative Procedures in closing out the Work.

RELATED REQUIREMENTS IN OTHER PARTS OF THE PROJECT MANUAL

Fiscal provisions, legal submittals and additional administrative requirements.

Closeout submittals required of various trades: The respective sections of Specifications.

FINAL CLEANING

Employ skilled personnel, or professional cleaners, for final cleaning.

Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior finished surfaces including plumbing and electrical fixtures and mechanical equipment; polish surfaces so designated to shine finish.

Wash and shine glazing and mirrors.

Polish glossy surfaces to a clear shine.

Ventilating Systems: Clean permanent filters and replace disposable filters if units were operated during construction. Clean ducts, blowers and coils if units were operated without filters during construction.

Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.

SUBSTANTIAL COMPLETION

When Contractor considers the Work is substantially complete, he shall submit to Architect:

1. A written notice that the work, or designated portion thereof, is substantially complete.
2. A list of items to be completed or corrected.

Within a reasonable time after receipt of such notice, Architect will make an inspection to determine the status of completion.

When Architect concurs that the Work is substantially complete, he will:

A. Prepare a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Architect, with dollar value retainage for each work item.
B. Submit the Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.
C. The Owner will supply a “beneficial occupy form” if required.

Owner may occupy the Project or designated portion of Project, under provisions stated in Beneficial Occupancy Form.

FINAL INSPECTION

When the Architect finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

CONTRACTOR'S CLOSEOUT SUBMITTALS TO ARCHITECT

PROJECT RECORD DOCUMENTS:

Refer to the General Conditions and Supplementary Conditions.

Contractor shall furnish to Architect one set of Record Documents including one set of construction drawings marked up to show "as built" conditions, incorporating all changes authorized during construction. (Architect shall delineate these changes to present reproducible documents to the Owner)

OPERATING & MAINTENANCE DATA, INSTRUCTIONS TO OWNER'S PERSONNEL:

Refer to Mechanical and Electrical and other applicable sections of the Project Manual.

Prior to Substantial Completion instruct Owner in the operation of all systems and equipment in accordance with manufacturer's recommendations and applicable sections of the Project Manual. Operating and maintenance manual shall constitute the basis for instruction.

SPARE PARTS & MAINTENANCE MATERIALS:

Refer to applicable sections of the Project Manual.

REQUIRED TESTS OF REGULATORY AGENCIES:

Submit certificate indicating that all required tests (water, etc.) of regulatory agencies have been complied with.

WARRANTIES & BONDS:
Furnish warranties and bonds specified in the various sections of the Specifications. Time of warranties to begin on date of Substantial Completion.

KEYS AND KEYING SCHEDULE:

Refer to Section 08710.

EVIDENCE OF PAYMENT AND RELEASE OF LIENS:

Certificate by Clerk of Court. Refer to Supplementary Conditions.

PART TWO - PRODUCTS

NOT APPLICABLE

PART THREE - EXECUTION

NOT APPLICABLE

END OF SECTION 01700

SECTION 01740 – WARRANTIES AND BONDS

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

SUMMARY

This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.

Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.

General closeout requirements are included in Section "Project Closeout."

Specific requirements for warranties for the Work and products and installations that are specified to be warranted are included in the individual Sections of Divisions-2 through
-16.

Certifications and other commitments arid agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

WARRANTY REQUIREMENTS

Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service.

Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, or shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, r remedies.

Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

The Owner reserves the right to refuse to accept Work for the reject where a. special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

SUBMITTALS

Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's certificate of Substantial Completion designates a commencement ate for warranties other than the date of Substantial Completion or the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.

> When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the Work.

When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.

> Refer to individual Sections of Divisions-2 through –16 for specific content requirements, and particular requirements for submittal of special warranties.

Form of Submittal: At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, by the Contractor, subcontractor, supplier, or manufacture Organize the warranty documents into an orderly sequence based the table of contents of the Project Manual.

Bind warranties and bonds in heavy-duty, commercial quality durable 3-ring vinyl covered loose-leaf binders, thickness necessary to accommodate contents, and sized to receive 8-1/2" 11" paper.

Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and t name, address and telephone number of the installer.

Identify each binder on the front and the spine with the type or printed title "WARRANTIES AND BONDS, the Project title name, and the name of the Contractor.

When operating and maintenance manuals are required f warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

SCHEDULE OF WARRANTIES

Schedule: Provide warranties and bonds on products an installations as specified in the following Sections but not limited to:

- Architectural Products
- Mechanical Warranties
- Electrical Warranties

END OF SECTION 01740

SECTION 02110 - SITE CLEARING

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

SUMMARY

This Section includes the following:

- Removal of trees and other vegetation
- Removal of concrete
- Topsoil stripping, stockpiling and re-spreading
- Clearing and grubbing
- Removing above-grade improvements
- Removing below-grade improvements

PROJECT CONDITIONS

Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.

Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements indicated to remain in place.

Protect improvements on adjoining properties and on Owner's property.

Protection of Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to be left standing.

Provide Protection for Roots: Trees over 1-1/2" diameter that are cut during construction operations. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

SITE CLEARING

General: Remove trees, shrubs, grass ad other vegetation, improvement, or obstructions as required permitting installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. "Removal" includes digging out and off-site disposing of stumps and roots.

Topsoil: Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4 inches. Satisfactory topsoil is reasonable free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, foliage, and other objectionable material.

> Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.
>
> Remove heavy growths of grass from areas before stripping.

Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.

> Stockpile topsoil in storage piles in areas indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, if required, to prevent rain and wind erosion. Reuse top soil suitable for finish and fine grading.
>
> Dispose of unsuitable or excess topsoil same as specified for disposal of waste material in area designated by Owner.

Clearing and Grubbing: Clear site of trees, shrubs and other vegetation, except for those indicated to be left standing.

> Completely remove stumps, roots, and other debris protruding through ground surface.
>
> Use only hand methods for grubbing inside drip line of trees indicated to remain.

Fill depressions caused by clearing and grubbing operations with satisfactory
soil material, unless further excavation or earthwork is indicated.

Place fill material in horizontal layers not exceeding 6 inches loose depth, and thoroughly compact to a density equal to adjacent original ground.

Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate new construction. Existing storm drainage shall be repaired as required.

DISPOSAL OF WASTE MATERIALS

Burning on Owner's Property: Burning is permitted on Owner's property as long at the Parish will allow burning and correct permits applicated.

Removal from Owner's Property: Remove waste materials, concrete, and unsuitable topsoil from Owner's property. All useable topsoil shall be placed on Owner's spoil area.

All items shall be disposed properly per Parish / City Ordinances and Codes.

END OF SECTION 02110

SECTION 02200 - EARTHWORK

PART ONE -GENERAL

DESCRIPTION

Provide excavation, backfill and compaction as indicated on the drawings and specified herein.

Provide additional fill material as required to replace excavated dirt not meeting requirements specified herein.

Also included are all necessary shoring, bracing and drainage equipment.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:

Testing Laboratory Services: Section 01410
Grading: Section 02110 – Site Clearing
Concrete:Division 03100 thru 03300
Excavating & Backfilling for Plumbing, Mechanical & Electrical Work: See Respective
Sections

OUALITY ASSURANCE

Testing laboratory, employed by Owner, to perform in-place soil compaction tests and material for controlled fill.

SUBMITTALS

Contractor to submit testing laboratory report certifying that controlled fill material used on the project meets requirements of this Section.

JOB CONDITIONS

Contractor to contact “DOTTIE” prior to start of construction to locate all known utilities.

Verify location of all existing utilities shown on drawings. Before beginning machine cutting, hand excavate to determine exact depth of existing utilities. Contractor assumes full responsibility for maintaining all existing utility services through lines indicated to remain.

Active utilities shown on drawings shall be adequately protected from damage and removed or relocated only as indicated or specified. Where active utilities are encountered but not are shown on drawings, notify Architect and adequately protect and support until advised by the Architect. Inactive and abandoned utilities encountered in excavation operations shall be reported to the Architect. Remove, cap or plug as directed by the Architect. In absence of specified instructions, cap or plug or as required by local authorities.

PROTECTION

Protect utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by excavation operations.

PART TWO - PRODUCTS

FILL MATERIAL

All backfill material shall have a maximum liquid limit of 35 and a maximum plasticity index of 15.

Excavated material that is approved by Architect may be used for backfills. All unsuitable material, and all surplus excavated material not required for backfill shall be removed from the site. The location of dump and length of haul shall be the Contractor’s responsibility.

Provide and place any additional fill material from off the site as may be necessary.

Submit samples of the fill material to the laboratory for testing (2) weeks in advance of the time of use.

Furnish written verification of the Classification prepared by an Independent Testing Laboratory, and obtain Architect’s approval of material prior to starting this phase of the work.

In areas of the building where fill exceeds one foot, a geo-textile fabric shall be placed n subsoil prior to the placement of fill.

PART THREE - EXECUTION

EXCAVATION

The contractor shall strip the site of all organic material, any paving material, tree roots and any other deleterious material. Site stripping shall be extended to a point 10 feet outside the foundation limits of the proposed building and from areas to be occupied by roads, walks, slabs and from areas that will receive cut and fill operations required to complete the site work specified on the drawings. The topsoil shall be placed in designated areas approved by Architect. Placement of the top soil shall not be placed in areas that will interfere with building or utility operations. All topsoil used on the project for finished grading shall be reasonably free from unsuitable subsoil excavation, debris, stones, roots or brush.

Areas where concrete or utilities or placed shall be excavated to the required depths, lines, and elevations as indicated or required for the project construction. Concrete excavations for footings, grade beams, shafts, or tie beams shall be of sufficient widths for the placement and removal of forms and to provide necessary room for proper compaction equipment to be used to insure proper soil compaction adjacent to these areas. Areas excavated for the placement of utilities shall be wide enough to provide for compaction of soil around each utility placed. The bottom of concrete structures and utilities shall be on firm undisturbed soil.

If the soil conditions require changes in the depth of the footings or other sub-surface work, such changes shall be made as directed by the Architect. Contractor shall not proceed with any changes that are not pre-authorized by the Architect or Owner. Testing laboratories used on the project shall notify the Architect of any possible soil condition that may require changes in the soil excavation.

Footings and foundations shall not be placed on disturbed soil. Footings and foundations shall be placed at the elevations shown on the drawings.

Provide and install the necessary shoring, cribbing, bracing, etc., as may be required to prevent caving and to protect adjacent buildings, property and the public. Bracing of all concrete footings, walls, piers, and beams shall be maintained until the newly placed concrete has reach sufficient strength to provide permanent support of itself or other types of construction.

All excavated areas shall be protected from both surface and ground water that may be encountered on the site during the construction period. Contractor shall provide and maintain all pumps and related equipment necessary to protect the excavated areas from water during the progress periods of the project. Contractor shall take precautions to protect, with barricades if necessary, excavated areas of the project.

<u>BACKFILL</u>

After completion of footings, piers, grade beams, or other work below the surface of the ground, all formwork shall be removed. Any imperfections in the concrete shall be repaired and the excavated areas shall be backfilled using select material specified herein. The backfill shall be placed in six (6) inch horizontal layers to compaction requirements specified herein. Fill against grade beams and walls shall be placed only after the concrete has reached sufficient strength, as determined by strength tests or approval of the Architect, to withstand the pressure of the compaction equipment. Fill on both sides of the grade beams or walls shall be at the same time.

Place backfill and fill materials in layers not more than eight (8) inches in loose depth for material compacted by heavy compaction equipment and not more than four (4) inches in loose depth for material compacted by hand -operated tampers. Soil density requirements are specified herein this section.

Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content of the soil material. Compact each layer to the required percentage of maximum dry density or relative dry for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen or contain frost or ice.

Provide and place additional earth fill materials needed to bring existing site elevations to the finish grades indicated on the drawings for the construction of buildings, walks, paving and finished site grading elevations

<u>COMPACTION</u>

Provide standar proctor for compaction.

Upon completion of the stripping of the site and prior to filling operations beginning, the site shall be inspected by the Architect to determine if any soft areas exist in the areas to receive select fill. The Architect may request that the site be proof-rolled using equipment that will not create a pumping affect to the subsoils that will receive the fill material. The Architect or his Engineer shall be the determining factor as to whether the site shall be proof-rolled. No additional monies will be given to the contractor if proof-rolling the site is required. Any localized soft areas of the site that are determined to be removed shall be replaced as directed by the Architect. Contractor shall receive a change order for the removal and replacement of the soil if required.

All fill material under slabs and pavements shall be compacted to a density of *95%* in accordance with ASTM D1557 and ASTM D1558. Compact all other backfills to 90% density in accordance with ASTM *D1557.* The top eight (8) inches of existing soil after excavation shall be scarified and compacted to obtain 92 % density per *D1557* and D1558. Each compacted area shall be approved prior to the placement of the next lift of fill material.

LABORATORY TESTS OF COMPACTED FILL

See Section 01400

EXCESS & WASTE MATERIALS

Remove from site and legally dispose of waste materials, including excess soil, rock, trash and debris.

END OF SECTION 02200

SECTION 02276 – EROSION CONTROL REQUIREMENTS

PART 1 - GENERAL

DESCRIPTION

The work specified in this Section consists of designing, providing, maintaining and removing temporary erosion and sedimentation controls as necessary.

Temporary erosion controls include, but are not limited to, grassing, mulching, setting, watering, and reseeding onsite surfaces and spoil and borrow area surfaces and providing interceptor ditches at ends of berms and at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the Owner.

Temporary sedimentation controls include, but are not limited to silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the Owner.

Contractor is responsible for providing effective temporary erosion and sediment control measures during construction or until final controls become effective.

It shall be the responsibility of the Contractor to attain all permits and associated documentation necessary to provide a Storm Water Pollution Prevention Plan for the construction sites. (See drawings)

REFERENCE DOCUMENTS

State of Louisiana
City or Parish Building Code
International Building Code.

PART 2 - PRODUCTS

EROSION CONTROL

Netting – fabricated of material acceptable to the Owner.

Straw mulch shall be utilized on all newly graded areas to protect areas against washouts and erosion. Straw mulch shall be comprised of threshed straw of oats, wheat, barley, or rye that is free from noxious weeds, mold or other objectionable material. The straw mulch shall contain at least 50 percent by weight of material to be 10-in. or longer. Straw shall be in an air-dry condition and suitable for placement with blower equipment.

SEDIMENTATION CONTROL

Bales – clean, seed-free cereal-hay type.

Netting – fabricated of material acceptable to the Owner.

Filter stone – crushed stone conforming to State D.O.T.D. Specifications.

Concrete block – hollow, non-load-bearing type.

Concrete – exterior grade not less than one inch thick.

SILT FENCE

Steel posts shall be a minimum of 5-ft in length, 2-1/2-in. by 2-1/2-in. by 1/4-in. angle post with self-fastening tabs and a 5-in. by 4-in. (nominal) steel anchor plate at bottom. 2-in. x 2-in. wood stakes with a minimum of 5-ft length may be used in lieu of steel posts.

Sow seed within twenty-four (24) hours after the ground is scarified with either mechanical seed drills or rotary hand seeders.

Silt fence fabric shall be a woven, polypropylene, ultraviolet resistant material such as Mirafi 100X as manufactured by Mirafi, Inc., Charlotte, NC or equal.

Tie wires for securing silt fence fabric to wire mesh shall be light gauge metal clips (hog rings), or 1/32-in. diameter soft aluminum wire.

Prefabricated commercial silt fence may be substituted for built-in-field fence. Prefabricated silt fence shall be “Envirofence” as manufactured by Mirafi Inc., Charlotte, NC or equal.

PART 3 - EXECUTION

EROSION CONTROL

Minimum procedures for grassing are:

Scarify slopes to a depth of not less than six inches and remove large clods, rock, stumps, roots larger than 2-inch in diameter and debris.
Sow seed within twenty-four (24) hours after the ground is scarified with either mechanical seed drills or rotary hand seeders.
Apply mulch loosely and to a thickness of between 3/4-inch and 1-1/2-inches.
Apply netting over mulched areas on sloped surfaces.

Roll and water seeded areas in a manner which will encourage sprouting of seeds and growing of grass. Reseed areas which exhibit unsatisfactory growth. Backfill and seed eroded areas.

SEDIMENTATION CONTROL

Install and maintain silt dams, traps, barriers, and appurtenances as shown on the approved descriptions and working drawings. Hay bales which deteriorate and filter stone which is dislodged shall be replaced.

Silt Fence Installation

Silt Fences shall be positioned as necessary to prevent off site movement of sediment produced by construction activities as directed by the Engineer.
Dig trench approximately 4-in. wide and 4-in. deep along proposed fence lines.
Drive metal-stakes, 6-ft on center (maximum) of wood stakes, 3-ft on center (maximum) at back edge of trenches. Stakes shall be driven 2-ft (minimum) into ground.
Hang 4 by 4 woven wire mesh on posts, setting bottom of wire in bottom of trench. Secure wire to posts with self-fastening tabs.
Hang filter fabric on wire carrying to bottom of trench with about 4-in. of fabric laid across bottom of trench. Stretch fabric fairly taut along fence length and secure with tie wires 12-in. O.C. both ways.
Backfill trench with excavated material and tamp.
Install pre-fabricated silt fence according to manufacturer's instructions.

Staging areas and access ways shall be surfaced with a minimum depth of 4-in. crushed stone.

MAINTENANCE AND INSPECTIONS

Inspections

Make a visual inspection of all sedimentation control devices once per week and promptly after every rainstorm. If such inspection reveals that additional measures are needed to prevent movement of sediment to offsite areas or into the vent trench, promptly install additional devices as needed. Sediment controls in need of maintenance shall be repaired promptly.

Device Maintenance

Silt Fences
Remove accumulated sediment once it builds up to one-half of the height of the fabric.
Replace damaged fabric or patch with a 2-ft minimum overlap.

Make other repairs as necessary to ensure that the fence is filtering all runoff directed to the fence.
Add crushed stone to access ways and staging area as necessary to maintain a firm surface free of ruts and mudholes.

PERFORMANCE

Should any of the temporary erosion and sediment control measures employed by the Contractor fail to produce results which comply with the requirements of the State of Louisiana and the City, Contractor shall immediately take whatever steps are necessary to correct the deficiency at his own expense.

END OF SECTION 02280

SECTION 02282 - TERMITE CONTROL

PART ONE - GENERAL

DESCRIPTION

Provide soil treatment for termite control under and around buildings or construction as described below.

Provide termite treatment on existing wood sleeper system at auditorium once existing flooring is removed and prior to installation of new wood floor.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Earthwork: Section 02200
Cast-in-Place Concrete: Section 03300

QUALITY ASSURANCE

Applicator shall be registered or licensed as required by state or other governing jurisdictions.

Applicator shall comply with termite control requirements of the state or other governing jurisdictions and with the requirements of this Specification where it exceeds other requirements. Should Government Regulations outlaw or restrict use of any pesticide as specified, Contractor shall submit revised and equal treatment to Architect prior to application.

GUARANTEE

Deliver to the Owner a bonded guarantee that the below listed requirements have been met and that re-treatment will be made, without cost to Owner, on evidence of termite infestation within a period of five *(5)* years after date of Substantial Completion. Re-treatment material shall be same quality and rate of concentration as originally used materials.

SUBMITTALS

Before proceeding with the work, provide Architect with manufacturer's mixing and application instructions.

PART TWO - PRODUCTS

MATERIALS

Apply one of the listed chemicals, at not less than the designated concentration, to areas to be treated: Use LA current approved manufacturers but not limited to the listed ones below..

Permethrin

FMC (Dragnet FT & SFR): 0.5 – 1.0 percent applied in water emulsion.

LG Chemical (Permaster 380): 0.5 – 1.0 percent applied in water emulsion.

America, Inc. (Permethrin SFR): 0.5 – 1.0 percent applied in water emulsion.

Co. Solutions (Prelude): 0.5 – 1.0 percent applied in water emulsion.

Zeneca (Tengaro SFR): 0.5 – 1.0 percent applied in water emulsion.

Microflow (Torpedo): 0.5 – 1.0 percent applied in water emulsion.

Bifenthrin

FMC (Biflex TC): 0.06 – 0.12 percent applied in water emulsion.

FMC (Talstar): 0.06 – 0.12 percent applied in water emulsion.

Cypermethrin

Zeneca (Demon): 0.25 – 0.50 percent applied in water emulsion.

FMC (Prevail): 0.30 – 0.60 percent applied in water emulsion.

FMC (Prevail TC): 0.30 – 0.60 percent applied in water emulsion.

Fenvalerate

AvrEvo (Tribute): 0.25 – 0.50 percent applied in water emulsion.

Proprietary materials, which pass a 5-year test by U. S. Forest Service or U. S. Department of Agriculture, and contain one or more of the above chemicals in the proper concentrations, and can provide proof that no toxic effect will result in human, beneficial plant or animal life, are acceptable. Contractor shall not use any material that is banned or prohibited by any U. S. Government Agency. If any such material is called for herein, Contractor shall notify Architect, who will select an acceptable substitute.

MIXES

Follow manufacturer's mixing instructions.

PART THREE - EXECUTION

INSPECTION

Notify Architect 48 hours prior to planned application of chemicals. Do not proceed without approval of Architect.

Do not begin work until all fill under slabs has been compacted, and after piping and other sub-slab work is in place. Treat before installation of vapor barrier.

Verify that soil is in friable condition with moisture content low enough to permit absorption of toxicant solution.

APPLICATION

Apply to areas beneath concrete floor slabs on grade or fill, and along both sides of interior and exterior grade beams.

Apply also at expansion joints, construction joints, conduit, piping and other construction penetrations through slabs.

SLABS ON GRADE: One (10) gallon to each ten (10) square feet of area within building lines.

GRADE BEAMS: One (1) gallon (each side) for each for (4) lineal feet of grade beam.

EXPANSION AND CONSTRUCTION JOINTS: Two (2) gallons for each five *(5)* linear feet of joint.

PIPE CONDUITS & OTHER SLAB PENETRATIONS: Two (2) gallons for each seven (7) square feet for a minimum radius of three (3) feet from penetration.

PROTECTION

Allow not less than 12 hours for drying after application, before beginning concrete placement or other construction activities.

Cover areas immediately following application of material.

Provide protection necessary to prevent human and animal contact with treatment materials and with treated surfaces.

Protect persons from injury and property damage. Satisfactorily repair or remove and replace work that has been damaged.

CLEANING

Clean adjacent surfaces not intended for treatment from soil, stain and adhered materials. Remove and replace damaged work that cannot be restored to original conditions.

Remove excess material and debris from site.

END OF SECTION 02282

SECTION 02500 - SITE DRAINAGE

PART ONE - GENERAL

DESCRIPTION

Provide site drainage, including concrete drainage structures, galvanized, asphalt coated metal pipe, and cast-iron frames and grates, as shown on the drawings and specified herein.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Earthwork: Section 02200
Cast-in-Place Concrete: Section 03300

QUALITY ASSURANCE

All products to meet specifications requirements.

Laboratory testing of controlled fill, compaction tests and concrete tests.

SUBMITTALS

Furnish certificates that products meet specification requirements.

JOB CONDITIONS

Pour no concrete unless ambient temperature is 40 degrees and rising.

Do not deposit concrete on wet or frozen ground.

PART TWO - PRODUCTS

MATERIALS

STORM DRAINAGE: As per 1992 edition of the “Louisiana Standard Specifications for Roads and Bridges”, sizes as indicated on drawings. Provide ADS HDPE Corrugated Plastic Pipe, HPStorm, Dual Wall Pipe Sure-Lok F477 Pipe by Hancor or equal. Joints shall be bell and spigot. Meets AASHTO M252, Type S; AASHTO M294, Type S; AASHTO MP7-97. Drawings may indicate exact type of piping.

PIPE FITTINGS: Provide fittings meeting AASHTO M252 Type S; ASSHTO M294 Type S; or MP7-97

CAST IRON FRAMES & GRATES:

Heavy-duty traffic shall be located in driveways or as indicated on drawings.

Standard Light-duty shall be located in the yard/grass areas as indicated on drawings.

SIDEWALK DRAIN: Shall be concrete and metal as indicated on drawings.

CONCRETE CATCH BASINS: Shall be concrete as indicated on drawings. (03300 – Cast-In-Place Concrete) <u>Pre-Cast concrete catch basins will be accepted. Crack basin will be sent back and new ones delivered unless drawings indicate otherwise.</u>

PART THREE - EXECUTION

INSPECTION

Verify locations and depths of all lines and other utilities before excavating for drainage system. (02200-Earthwork)

Verify finish elevations and flow lines of drainage structures and pipe to assure proper drainage of entire system.

INSTALLATION

Construct drainage structures as detailed.

Lay pipe to true and proper grades and alignment as shown on plans and as directed by the Architect, in a trench, the width of which is not less than twelve (12) nor more than eighteen (18) inches greater than the outside diameter of the pipe.

The bottom of the trench shall be shaped to fit the contour of the pipe for a depth equal to at least one-tenth (1/10) the outside diameter of the pipe.

Lay all pipe with the bell upstream.

Use carborundum saw to make all cuts in concrete pipe.

Apply joint material in a manner as recommended by manufacturer.

Wrap all joints with filter fabric prior to backfilling.

Do not backfill trench until pipe and joints are inspected and approved by Architect. Replace all damaged pipe and unsatisfactory joints.

Backfill and compact as specified in Section 02220.

PATCHING, FINISHING & CLEAN-UP

Patch and grout all exposed joints in pipe and drainage structure.

All concrete pipe edges to be neat and smooth.

Finish exposed cast-in-place concrete as specified.
Clean out drainage structures and grout bottom to slope to pipe. Clean all pipe.

Clean metal frames and gratings.

END OF SECTION 02500

SECTION 02520 - PORTLAND CEMENT CONCRETE PAVING & WALKS

PART ONE - GENERAL

DESCRIPTION

Provide portland cement concrete pavings and walks as indicated on the drawings and specified herein, including driveways, parking areas, curbs, walks, catch basins and inlets.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Testing Laboratory Service: Section 01410
Site Clearing: Section 02110
Earthwork: Section 02200
Site Drainage: Section 02500
Concrete Formwork: Section 03100
Concrete Reinforcement: Section 03200
Cast-in-Place Concrete: Section 03300

QUALITY ASSURANCE

All concrete paving work shall conform to the requirements of the Portland Cement Association's "Specifications for Plain and Reinforced Concrete", latest revisions, and American Concrete Institute's "Building Code Requirements for Reinforced Concrete", ACI 318, latest revision.

Testing laboratory, employed by Owner, shall perform testing of paving concrete. See Section 01410.

JOB CONDITIONS

Do not place concrete when ambient temperature is below 40 degrees F and falling; or 40 degrees F and above, but predicted to fall to 32 degrees F or below within 24 hours after termination of the pour.

Do not place concrete in rain or on frozen ground, or un-prepared.

PART 2 - PRODUCTS

MATERIALS

IF NOT INDICATED ON DRAWING - CONCRETE: In accordance with Section 03300, shall attain a compressive strength of 3500 psi in 28 days @ paving. Use 3000 psi in 28 days @ sidewalks and catch basins or as indicated on drawings. Use 4000 psi in 28 days @ curb and gutters.

REINFORCING STEEL: 6 x 6 x 6 gauge WWM (Mats) unless otherwise indicated on plans @ paving only. Use pre-cast concrete blocks 3" x 8" x thickness required for proper clearance of bottom layer of steel. Irregular or broken pieces not permitted. Concrete for blocks to be of same density as concrete in which it is placed. Steel chairs maybe used in lieu of concrete blocks.

EXPANSION JOINT MATERIAL: Pre-molded, non-extruding, bituminous saturated fiber board meeting requirements of ASTM D-1751 of thickness as indicated.

WOOD EXPANSION JOINTS: Provide ¾" redwood with plastic expansion cap to be removed for joint sealant.

FORMS: Either steel or wood, of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use forms that are straight and free of distortion and defects. Use flexible steel forms or laminated boards to form radius bends as required. Coat forms with a non-staining form release agent that will not discolor or deface the concrete surface.

METAL EXPANSION CAPS: Provide one for end of each dowel bar in expansion joints.
Design caps with one closed and a minimum length of 3" to allow bar movement of not less than 1".

JOINT SEALANT: Cold applied, two part, job mixed, self-leveling urethane compound conforming to Fed Spec. TT-S-00227 Type I, Class A, Service Temperature Range -40 degrees -180 degrees F. Accepted product "Sonolastic Paving Joint Sealer: by Sonneborn - Contech; "NR-l00" by Pecora Corp. Furnish in gray color.

SAND CUSHION: 2" thickness DOTD Designation TR 423 Class A-3 @ walks or as indicated on drawing otherwise. Provide 4" thickness @ foundation for leveling purposes.

Minimum requirements are not minimum average values. Minimum average values per roll are not an acceptable specification.

PARKING CURBS: Provide concrete 9" wide x 6" high x 6' long with 1 ½" chamfers @ top (each side) w/ 2-#3 bars continuous thru curb and anchor curb with #4 rods (2'-0" length minimum- 3 per curb.) If indicated on plans.

PART THREE - EXECUTION

INSPECTION

Verify that all grading and earthwork are completed and sub-grade is at required elevation.

Check that sub-grade is level, compacted and free of excessive moisture or frost to receive sand base Sub-grade for paving shall be compacted to density specified in Section 02110.

Determine that manholes, area drains and other drainage structures are at required elevation and alignment. Verify proper drainage to all structures.

Install and securely fasten all embedded items before placing concrete.

Place and level sand cushion over sub-grade under all paving. Depth of cushion to be 2" under drives, parking and sidewalks, unless detailed otherwise.

FORMS

Set forms to required grades and lines, rigidly braced and secured. Clean forms after each use, and coat form with oil as often as required to ensure separation from concrete without damage. Do not remove forms before concrete has taken final set.

EXPANSION JOINTS

Set Expansion Joint material to required grades and lines, rigidly braced and secured to resist movement during concrete placement and to retain horizontal and vertical alignment.

Area within paving areas shall not exceed 20' x 20' without placement of expansion joints unless drawn otherwise.

Maximum length of sidewalk run shall not exceed 16' without placement of expansion joint unless drawn otherwise.

Extend joint fillers full-width and depth of joint, and not less than 1/2" or more than 1" below finished surface where joint sealer is required.

Furnish joint fillers in one piece lengths for the full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together.

Protect top edge of the joint filler furring concrete placement with a metal cap or other temporary material. Remove protection prior to cleaning and sealing of joints.

Install dowel bars maximum 18" o.c. (unless noted otherwise) accurately in joint assemblies, each parallel to surface of concrete paving and walk and to each other. Rigidly secure in place by dowel supports to prevent displacement during paving operations. Coat 1/2 length of each dowel with grease or heavy oil and insert greased end into metal cap to allow 1" mm. bar movement.

CONSTRUCTION CONTROL JOINTS

Construct scored construction joints in all walks, maximum spacing 4' o.c., equally spaced between expansion joints.

Provide construction control joints to a depth equal to 1/4 the thickness of the concrete. Weakened planes shall be created by sawing or tooling method at Contractor's option. Do not saw joints until concrete has hardened sufficiently to prevent spalling or damage to edges of joints. Reinforcement shall be continuous thru contraction joints.

REINFORCEMENT

Place welded wire mesh and re-bar reinforcement accurately in position as detailed on drawings. Firmly secure all bars against displacement and keep welded wire mesh from bottom of formed area.

Install dowel bars in pavement and walk expansion joints, each parallel to surface of concrete and to each other. Rigidly secure in place by dowel supports.

CONCRETE PLACEMENT

Do not place concrete until sub-base and forms have been checked for line and grade. Moisture sub-base if required to provide a uniform dampened condition at the time concrete is placed.

Deposit concrete as nearly as practicable in its final position. Place concrete for full thickness in one operation without change in proportions.

Place concrete using methods which prevent segregation of the mix. Consolidate concrete along the face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.

Deposit and spread concrete in a continuous operation between transverse joints, as far as possible. If interrupted for more than 1/2 hour, place a construction joint.

Before depositing new concrete against old, clean existing surface and apply bonding agent in accordance with manufacturer’s instructions.

When construction joints are required by the drawings, adjacent slab sections shall not be placed on the same day.

When adjacent pavement lanes are placed in separate pours, do not operate equipment on the concrete until the pavement has attained sufficient strength to carry the loads without injury.

Place curb reinforcing ties into paving slab while concrete is still wet. Place curb concrete and rod curb concrete into slab to insure bond. Accurate form integral curb with a “mule” to correct profile, creating a coved intersection between curb and paving slab.

After striking-off and consolidating concrete, smooth the surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust the floating to compare the surface and produce a uniform texture.

After floating, test surface for trueness with a 10’ straightedge. Distribute concrete as required to remove surface irregularities and re-float repaired areas to provide a continuous smooth finish. No dust coating permitted.

Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/3” radius, unless otherwise indicated. Eliminate any tool marks on concrete surface.

After completion of floating and when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:

DRIVES AND PARKING AREAS: Heavy coarse broom finish. Final finish subject to Architect’s approval.

WALKS: Light broom finish at right angles to long dimension. Final finish subject to Architect’s approval.

INCLINED SURFACES: Coarse, non-slip finish be scoring with a stiff-bristled broom, perpendicular to line of traffic.

HANDICAP CURB RAMPS: Provide tactile warning surface at handicap curb ramps as indicated on drawings.

CURBS

While the concrete is green, finish the top and face of the curb by rubbing the surface with a wood or concrete rubbing block and water until all blemishes, form marks, and tool marks have been removed. Ample water shall be used during the rubbing to avoid a plastered condition. The flow lines of gutters shall be finished to cove profile. The rubbed surface shall then be brushed with a fine-textured brush to obtain a uniform surface.

CURING

Immediately after finishing operations, and while surfaces are still moist, apply curing materials in accordance with manufacturer’s recommendations. Curing material shall form an effective seal to prevent evaporation or loss of moisture from the concrete for the full curing period of 7 days.

Do not remove forms for 24 hours after concrete has been placed. Remove forms carefully to prevent damage to green concrete. After form removal, clean ends of joints and point-up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by Architect.

BACKFILLING

As soon as practicable after form removal and patching, remove debris, broken concrete and trash from edges of curbs and paving and backfill, grade and compact to lines and grades indicated on drawings. Unless indicated otherwise, finish grade shall be 2” below edges of concrete.

SEALING JOINTS

After the expiration of the curing period, remove temporary top fillers at expansion joints. Clean expansion joints and other (tooled) joints. Joints which do not comply with detail or specification requirements shall be cut with power saw to form a groove of required dimensions. Grooves shall have edges free of ravels and spalls. Grooves shall be straight from edge to edge of pavement and shall not vary more than 1/2 inch from alignment.

Seal joints immediately after joint preparation. Seal joints in accordance with sealant manufacturer's instructions. Remove surplus and spilled sealer.

GROOVING & SEALING CRACKS

Random cracks, except those specifically excluded by the Architect, that occur in the pavement during construction shall be grooved and sealed. The top of the crack shall be grooved to a depth of 3/4 inch and to a width not less than 3/8 inch or more than *5/8* inch by means of an approved mechanical grooving machine. The grooving tool shall be capable of following closely the path of the crack and of widening the top of the crack to the required section without spilling or otherwise damaging the concrete. Loose and fractured concrete shall be removed, and the groove shall be thoroughly cleaned and completely filled with joint sealing material.

REPAIRS & PROTECTION

Repair or replace broken or defective concrete, as directed by Architect.

Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

Sweep concrete pavement and wash free of stains, discolorations, dirt and other foreign material just prior to final inspection.

END OF SECTION 02520

SECTION 03100 – CONCRETE FORMWORK

PART ONE – GENERAL

DESCRIPTION

Provide formwork, ties, coating, water stops, metal construction joints, anchors and accessories as required for concrete work indicated on the drawings, specified herein, or otherwise required.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Concrete Reinforcement: Section 03200
Cast-in-Place Concrete: Section 03300

SUBMITTALS

Description and recommended installation instructions for form ties, spreaders, form coatings.

PRODUCT DELIVERY. STORAGE & HANDLING

On delivery to job site, place materials in area protected from weather.

Store and handle materials in manner to prevent damage.

MATERIALS

PART TWO - PRODUCTS

LUMBER: Softwood framing lumber; kiln dried, PS 20, No. 2 common grade. Grade marked by grading rules agency approved by American Lumber Standards Committee.

PLYWOOD: Exterior type softwood plywood, PS 1, panel veneer grades BB. Each panel stamped or branded indicating veneer grades, species, type and identification. Mill-oiled sides and mill-sealed edges of panels.

FORM COATING: Nonstaining mineral oil approved by the Architect.

FORM TIES: Metal, adjustable in length, designed so metal can be cut off one inch back from finished surface.

CORNER FORMERS: Wood or plastic chamfered face.

METAL CONSTRUCTION JOINT: 20 gauge galvanized steel tongue & groove metal key joint. Size as per thickness of concrete. Contractor shall provide construction joints as indicated on plans.

SAWCUT CONSTRUCTION JOINT: Provide 3” deep saw-cuts in foundation as indicated on drawings or otherwise indicated.

PART THREE - EXECUTION

GENERAL

Forms for exposed concrete surfaces shall be plywood of uniform thickness to produce smooth, even surfaces. Forms for unexposed surfaces may be No. 2 common grade or better lumber. Provide temporary openings in formwork for concrete placement.

All concrete shall be placed in forms except footing and grade beam bottoms. Sides of footings may be earth formed provided soil is stable enough to assure clean, straight and vertical lines.

Construct forms true to line, grade, shape and dimensions of concrete element, mortar tight, and of such construction to permit removal.

Forms shall be sufficiently rigid to prevent displacement or sagging between supports. Contractor shall be responsible for their adequacy and shall correct all work caused by improper form construction.

Form surfaces shall be smooth and free from irregularities, dents, sags or holes when used for permanently exposed concrete. Provide chamfered external corners for beams and columns exposed to view.

FORM COATING: Coat forms for all exposed concrete surfaces. Apply coating before setting reinforcing. Remove all coating from reinforcing steel. Forms for unexposed surfaces may be thoroughly wetted with water in lieu of oiling, immediately before placing of concrete.

FORM TIES: Locate ties at rustication marks, control joints, or points where visual effect will be minimized. Locate ties equidistant and symmetrical, lined up both vertically and horizontally. Bolts and rods used for internal ties to be removed, shall be coated with grease. Wire ties will not be permitted where concrete surface is exposed.

BUILT-IN ITEMS: Built-in anchors, inserts, and bolts required for the connection of other materials. Build-in sleeves, thimbles and other items furnished by other trades.

BASES FOR EQUIPMENT: Provide wood forms for concrete bases as required for mechanical & electrical equipment items. Refer to Architectural, Structural, Mechanical and Electrical Drawings for quantity and size. Coordinate with Mechanical & Electrical Contractor.

FORM RE-USE: Clean and repair surfaces of forms to be re-used. Split, frayed, delaminated or otherwise damaged form facing material not acceptable. Apply form coating prior to re-use. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joints to avoid offsets. I do not use "patched" forms for exposed concrete surfaces, except as acceptable to Architect.

FORM REMOVAL: Do not remove forms or shoring without approval of Architect. Remove forms in manner to insure complete safety of work and prevention of defects. Any failure, damage or defects arising from removal of forms or shores is the sole responsibility of the Contractor.

Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and other parts of the work, may be removed after cumulatively curing at not less than 50 degrees F. for 48 hours after placing concrete, provided curing and protection procedures are maintained.

Formwork supporting weight of concrete, such as beam soffits, joints, slabs and other structural elements, may not be removed in less than 14 days and until concrete has attained the 28 day minimum compressive strength.

Rods which are to be entirely removed from the wall shall be loosened 24 hours after concrete placed, and form ties, except for a sufficient number to hold forms in place, may be removed at this time. Ties wholly withdrawn from wall shall be pulled toward the face that will be concealed from view in the permanent work.

RE-SHORING: Comply with ACI 347 for shoring and re-shoring of all suspended concrete as herein specified. Extend shoring from ground to bottom of all suspended concrete unless otherwise permitted.

Space out shoring in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members where no reinforcing steel is provided. Extend shores beyond minimums if required to ensure the proper distribution of loads throughout the structure. Remove shores, and re-shore in a planned sequence to avoid damage to partially cured concrete.

Locate and provide adequate re-shoring to safely support the work without excessive stress or deflection. Keep re-shores in place a minimum of 15 days after placing upper tier, and longer if required, until the concrete has attained its required 28-day strength and heavy loads due to construction operations have been removed.

END OF SECTION 03100

SECTION 03200 - CONCRETE REINFORCEMENT

PART ONE - GENERAL

DESCRIPTION

Provide concrete reinforcement, supports, wire and accessories as indicated on the drawings and specified herein.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements
Concrete Formwork: Section 03100
Cast-in-Place Concrete: Section 03300

QUALITY ASSURANCE

Comply with requirements of ACI Code and CRSI. Steel shall be of domestic manufacture. Foreign made steel not acceptable.

SUBMITTALS

Submit shop drawings for approval. Submittals shall include schedules, bending, and placement location in the work and other pertinent information.

Drawings shall be checked in the fabricators drafting room and so noted before submission; all bars, including straight bars, shall bear a placing mark and the drawings shall show the location of each bar in the structure. Bar lists alone are not considered adequate for this purpose.

Furnish certified copies of mill tests with all deliveries of reinforcing steel.

STORAGE MATERIALS

Subject to approval of the Architect and to allow easy access for inspection and definite identification of each shipment in accordance with report of tests. Store to prevent rust or accumulation shall be of foreign matter.

Coordinate placement of reinforcing steel with requirements of other trades. No cutting of reinforcement or displacement of bars shall be done by any of the trades without the consent of the Architect, and then only when adequate reinforcement is provided to replace the design requirements.

PART TWO - PRODUCTS

MATERIALS

REINFORCING STEEL: Meet requirements of ASTM A-61 *5,* Grade 60, except #3 allowed by Current ACI 318 Building Code Requirements for Reinforced Concrete. Reinforcing steel shall be new, clean and free of heavy rust and scale.

WELDED WIRE FABRIC MATS: Meet requirements of ASTM A-185. Provide 6 x 6 x 6 gauge WWM (Mats) unless otherwise indicated. See drawings for location and use.

TOP WIRES: Black, annealed, 14 gauge.

REINFORCEMENT SUPPORT: Chairs, spacers and other devices for supporting, spacing and fastening reinforcement shall be of proper size to safely carry the construction loads as recommended by CRSI. Supports and spacers occurring in exposed concrete surfaces shall be zinc or plastic coated. Spacing of supports and spacers shall conform to requirements of CRSI and as specified herein.

SUPPORTS FOR FOOTINGS, BEAMS AND SLABS ON GRADE: Use pre-cast concrete blocks 3" x 8" with thickness required for proper clearance of bottom layer of steel. Irregular or broken pieces not permitted. Concrete for blocks to be of same density as concrete in which it is placed. Space supports in footing and beams 4'-0" o.c. maximum and in slabs-on-grade 4'-0" o.c. maximum each direction. Steel chairs may be used in lieu of concrete blocks.

SHOP FABRICATION

Cut, form and fabricate all reinforcement to shapes indicated and to conform with requirements of ACI Code. Bend bars cold and free of cracks, splits or kinks. Provide proper clearances.

Bar lengths noted in the various schedules are approximate finished fabricated lengths for estimating purposes only. Make stirrups with four inch hook.

PART 3 – EXECUTION

PLACEMENT

Place bars accurately in position. Firmly secure all bars against displacement with wire and specified supports and spacers before concreting is begin. Space supports in accordance with recommendations of ACI Code.

All suspended concrete shall be reinforced.

At time concrete is placed, metal reinforcement shall be free from mud, oil or other nonmetallic coatings that adversely affects bonding capacity.

TOLERANCES

Unless otherwise specified by the Engineer, reinforcement shall be placed within the following tolerances:

Tolerance for depth d, and minimum concrete cover in flexural members, walls and compression members shall be as follows:

		Tolerance on d	Tolerance minimum concrete cover
d	≥	± 3/8 in.	- 3/8 in.
d	>	± ½ in.	- 3/8 in.

Except that tolerance for the clear distance to formed soffits shall be minus 1/4 in. and tolerance for cover shall not exceed minus one-third the minimum concrete cover required in the contract drawings or in the specifications.

SPLICING: Make splices of reinforcement at points of minimum stress, length to 30 bar diameters, minimum of 15 inches.

LINTELS: Provide reinforcing steel for all reinforced concrete filled masonry lintels and bond beams. Unless otherwise noted, lintels will require two No. 5 bars for 6" partitions or less, and four No. 5 bars for 8" and 12" partitions. Length of lintel bars shall be masonry opening, plus 1'- 4". Bond beam reinforcing shall be as called for on drawings.

INSPECTION OF STEEL PLACEMENT

The Architect or his representative shall be given 24 hours notice to inspect placement of reinforcing steel before concrete is placed. Such inspection is in nature of assisting Contractor to minimize errors, and in no case will it serve to relieve Contractor of his responsibility to provide materials and workmanship required by Contract Documents

MISC. STEEL: In addition to the reinforcing shown on plans supply 1000 l.f. No. 4; 1500 l.f. No. 5 and 1500 1.f. No. 6 in twenty foot lengths. Contractor shall cut and place bars at direction of Engineer if deemed necessary @ no additional expense to the owner.

END OF SECTION 03200

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART ONE - GENERAL

DESCRIPTION

Provide all structural and architectural concrete and related items where shown on drawings, as required, and as specified herein, including:

Concrete beams, floor slabs, vapor barrier, foundations, embedded items and anchors, concrete finishes and miscellaneous concrete.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Concrete Formwork: Section 03100
Concrete Reinforcement: Section 03200
Membrane Waterproofing: Section 07110

QUALITY ASSURANCE

Materials and workmanship for Portland Cement concrete shall conform to the requirements of the Portland Cement Association's "Specifications for Plain and Reinforced Concrete", latest revisions. Other publications (latest revisions), and American Concrete Institute's "Building Code Requirements for Reinforced Concrete, ACI 318-95," latest revision.

Testing Laboratory, employed by Owner, shall perform testing of cast-in-place concrete.

CONCRETE FIELD TESTS: Four (4) 6 inch by 12 inch concrete cylinders shall be molded for each 50 cubic yards or each day's pour if less than 50 cubic yards. Cylinders shall remain undisturbed in a secure location on the site for 24 hours after which they shall be removed to the testing lab by laboratory personnel. Two of the cylinders shall be tested at 7 days and two at 28 days. Failure of the concrete to meet the specification requirements may result in its complete removal and replacement at the Contractor's expense. Cost of re-test, if any, will be at the Contractor's expense.

MATERIALS

PORTLAND CEMENT: ASTM C-150, Type 1. Use same brand of cement throughout entire project.

COURSE AGGREGATE: Hard, durable, un-coated crushed stone or gravel, ASTM C-33-CIT. Maximum size aggregate: 3/4 of minimum clear spacing between reinforcing bars, but not larger than 1-1/2” for all footings, walls and slabs on grade and 3/4” for all other structural and architectural concrete.

SAND: ASTM C-33-59*.*

MIXING WATER: Clean, potable, free of oil, acid, vegetable matter, alkalies, salts.

ADMIXTURE: Water reducer and Set Retarder and/or Accelerator: Shall be used in all concrete except footings. USE NO CHLORIDES.

EXPANSION JOINT FILLER: 1/2” thick, except where noted 1” thick, pre-molded, nonextruding material complying with Federal Specification HH-F-341, Type I, wide enough to complete separate abutting concrete members. Provide where detailed and where concrete walks abut other concrete surfaces and at internals not exceeding 36 feet.

CURING COMPOUND: ASTM C-309 approved by Architect. Use Type I, Clear, for interior surfaces and Type 2, White Pigmented, for exterior surfaces.

CHEMICAL HARDENER: CE-204, colorless, sprayed or poured and squeegeed. Sonneborn LAPIDOLITH, Meadows PENA-LITH or L & M CHEM-HARD acceptable.

SEALANT: Two component polysulfide sealant shall be used on all vertical and horizontal surfaces. All primers and installation shall be in strict accordance with manufacturer’s instructions. All sealants shall be compatible with back-up material.

METAL ACCESSORIES: Include all spacers, chairs holsters, ties, and other devices necessary for properly placing, spacing, supporting, fastening reinforcement in place. Metal accessories shall be galvanized where legs will be exposed in finished concrete surfaces. Accessories shall conform to requirements of the Concrete Reinforcing Steel Institute (CRSI) “ Manual of Standard Practice for Reinforced Concrete Construction.”

STRENGTH, PROPORTION, MIXES OF CONCRETE

3000 psi and 3500 (as indicated on plans) @ 28 days, unless otherwise designated. Keep water-cement ratio to a minimum, do not exceed 6-1/2 gallons per bag of cement including free moisture in aggregate, slump between 3” and *5”.*

However, the Mix Design shall be proportioned to achieve an average strength of 750 psi higher than the design strength.

Fly ash will not be accepted.

Concrete shall have a minimum of 5 1/2 sacks of cement per cubic yard of concrete.

All exterior concrete shall be air entrained.

MIXING CONCRETE

Ready-mixed, ASTM C-94, delivery by trucks with power-driven mixers. Plant operator must guarantee not over 15 minute interval between trucks during any pouring operations. Do not add water after truck leaves plant. Do not use concrete held in mixer longer than one (1) hour.

A copy of each truck delivery ticket shall be made available by truck driver to Architect's representative and/or Testing Laboratory Representative at the site. Minimum delivery ticket information shall include:

1. Ticket Number.
2. Mix proportions, including admixtures.
3. Time of batching.
4. Number of cubic yards of concrete on truck.

PART THREE - EXECUTION

PREPARATION

Cast-In-Place Items: Before concrete placing begins, accurately space, position and secure cast-in-place anchorages, wire ties, reinforcing, dowels, expansion joints, construction joints, etc., including bolts, for securing adjoining or collateral materials to concrete work.

Contractors for other trades requiring built-in connections, sleeves, slots, chases, recesses, rough. ins, etc., in concrete work will be required to furnish material and information regarding size and location before forms are erected. Install sleeves in beams only on approval of Architect.

Install vapor barrier in strict accordance, and specified in Section 07110.

INSERTS AND FASTENING DEVICES FOR OTHER WORK

Provide for installation of inserts, conduit, pipe, sleeves, drains hangers, metal ties, shelf angle supports, anchors, bolts, angle guards, stair nosing, dowels, thimbles, metal reglets, nailing strips, blocking, grounds and other fastening devices required for attachment of other work. Properly locate in cooperation with other trades and secure in position before concrete is placed.

BASES FOR EQUIPMENT

Provide concrete for bases as required for Mechanical & Electrical equipment items. Refer to Architectural, Structural, Mechanical and Electrical Drawings for quantity and size. Coordinate with Mechanical & Electrical Contractor.

TEMPERATURE LIMITATIONS

COLD WEATHER: Do not place concrete when ambient temperature is 40 degrees F. or below, and falling. It may be placed when the temperature is 40 degrees F. or above and rising, providing there is no reason to expect a drop in temperature to below 40 degrees F. within 24 hours of the conclusion of the pour.

HOT WEATHER: Do not place concrete when concrete temperature exceeds 90 degrees F. when measured prior to placement on site.

DEPOSITING CONCRETE

Begin placing concrete only after forms, reinforcement, vapor barrier and other conditions are approved by Architect, and all pipes, conduits, sleeves, thimbles, hangers, anchors, flashing and other work required have been properly installed and forms properly cleaned and wetted.

Remove hardened concrete and foreign materials from inner surfaces of conveying equipment before concrete is placed.

Remove water from the space to be occupied by concrete, divert any continuous flow to a sump or remove by pumping.

Convey concrete from mixer to forms as rapidly as practicable without segregation or loss of ingredients. Maximum slope of chutes: 1 vertical to 2 horizontal. Provide baffle plate and spout or tremies to prevent separation. Concrete shall not be allowed to drop more than four (4) feet.

Deposit concrete as nearly as practicable in its final position in such a manner as to maintain a plastic surface, which is approximately horizontal, and avoid flow along forms. Set screeds to bring slabs to proper levels, required thickness, tamp with suitable tool to force coarse aggregate layers of such thickness that no concrete will be deposited against concrete which has hardened.

If a section cannot be placed continuously, locate keyed construction joints at points approved by Architect. Before depositing new concrete against old, re-tighten forms, clean hardened surfaces and cover with a coating of neat cement grout.

Thoroughly compact beam concrete during and immediately after depositing by means of approved mechanical vibration in accordance with PCA Specifications ST 26.

When construction joints are required by the drawings, adjacent slab sections shall not be placed on the same day.

CEMENT FINISHES

EXPOSED VERTICAL SURFACES: Form and pour exposed surfaces so that surfaces are finished in appearance when forms are stripped. It is not the intention that these surfaces be rubbed, except to eliminate voids, joints in forms and any loose flakes. Rub such defects to present a complete finished surface, free from visible lines, and from marks. Should any honeycombs appear, neatly cut out and repair in such a manner as to match the adjoining surfaces in texture, rub if necessary.

EXPOSED SURFACES REQUIRING PAINT FINISH: Apply rubbed finish on all exposed concrete surfaces scheduled to receive paint finish. Fine and other projections shall be carefully removed, offsets leveled, and damaged places repaired. Surfaces shall then be rubbed with cement or abrasive bricks and water. Do not use mortar or grout in the rubbing process. Remove from marks and similar blemishes and leave the surface finish uniformly smooth and clean. Use the same cement for patching as used in original concrete.

CEMENT FINISH FLOORS AND FLOORS TO RECEIVE FLOOR COVERINGS: Agitate concrete sufficiently to work aggregate into the body of the slab and to work to the surface sufficient mortar to allow proper floating, trowel with steel trowel until set, leave smooth and level. No dust coat shall be added.

Concrete floors scheduled to receive thin set ceramic tile shall receive a steel trowel and fine broom finish.

CURING

Protect against frost and rapid drying for at least seven days after placing.

As long as forms remain in place, keep concrete well wetted. When forms are removed, treat with curing compound.

Vertical concrete shall be protected by applying an approved curing compound as directed by the manufacturer, and horizontal concrete shall be protected by covering with 8 mil polyethylene sheeting with joints lapped 4 inches and sealed with pressure sensitive tape. Weight sheeting in position.

SEALED CONCRETE FINISH: Apply to interior concrete floors where shown on drawings or in schedules. Apply liquid chemical-hardener after complete curing and drying of the concrete surface. Dilute liquid hardener with water, and apply in 3 coats, Saniseal 100 by Master Builders or an approved equal. Apply chemical hardeners in accordance with manufacturer's printed instructions.

LINTELS, BOND BEAMS AND JOINT BEARING LOCATIONS

Concrete shall consist, by weight, of one (1) part Cement and one and one-half (1-1/2) parts of sand and two (2) parts of clean pea gravel. Slump shall not extend three (3) inches.

PATCHES

Fill and finish any honey-combed surfaces with a mortar of one part cement and two parts sand. Where honey-combing or other surface blemishes occur in concrete to be exposed to view, rub to present a uniform appearance.

CLEANING

Upon completion of concrete work, all forms, equipment, and rubbish resulting from this work shall be removed from the premises. All concrete shall be left clean and free of defects.

END OF SECTION 03300

SECTION 05100 - STRUCTURAL STEEL

PART ONE - GENERAL

DESCRIPTION

Work included: Furnish, fabricate, mark for erection identification, pack, crate, erect, or otherwise properly prepare for shipment, and ship to the site all structural steel columns, beams, angles, anchor bolts, erection bolts, nuts, welding electrodes and other miscellaneous items required for structural steel frame, miscellaneous metal items or indicated on the Drawings, described in these Specifications, or otherwise required for proper completion of work.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions
Testing Laboratory Services: Section 01400
Open-Web Steel Joists: Section 05200
Metal Fabrications: Section 05500

STANDARD

The AISC Specification for Design, Fabrication and Erection of Structural Steel for Buildings shall govern the work. Welding shall be in accordance with AWS Code DI .1 High strength bolting shall be in accordance with AISC Specification for Structural Joints Using ASTM A-325 or A-490 Bolts.

SUBMITTALS

SHOP DRAWINGS: Shall include all shop and erection details, and members and connections for any portion of the structure not shown on the contract drawings shall be detailed by the fabricator and indicated on the shop drawings. All welds shall be indicated by standard welding symbols of the AWS.

CERTIFICATION: Certified copies of mill test reports including names and locations of mills and shops, shall be furnished for all structural steel.

RESPONSIBILITY FOR ERRORS: The Contractor shall be responsible for all errors of detailing, fabrication, and for the correct fitting of the structural members.

QUALIFICATION OF WELDERS: Certification that each welder is qualified in accordance with AWS Code DI .1 shall be provided. Any welder shall be retested and recertified when the work of the welder creates a reasonable doubt as to his proficiency. Tests, when required, shall be conducted at no additional expense to the Owner. Recertification of the welder shall be submitted only after the welder has taken and passed the required retest.

PRODUCT HANDLING

Material shall be stored out of contact with the ground in such a manner and location as will minimize contamination and deterioration.

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART TWO - PRODUCTS

MATERIALS

STRUCTURAL STEEL: ASTM Specification A-36 or A992.

STRUCTURAL TUBING: ASTM Specification A-500, Grade B

STEEL PIPE: ASTM Specification A-53, (Type E) (Type S), Grade B.

PAINT: Tnemec 10-99; Southern Coatings RIP 1-0988.

HIGH-STRENGTH BOLTS, (including nuts and washers): ASTM Specification A-325 or A-490.

BOLTS AND NUTS, (other than high-strength): ASTM Specifications A-307, Grade A.

PLAIN WASHERS, (other than those in contact with high-strength bolt heads and nuts): ANSI Standard B 18.22.1, type B.

STEEL CASTINGS: Comply with ASTM A27, Grade 65-35, medium-strength carbon steel.

ANCHOR BOLTS: Comply with ASTM A307, non-headed type with heavy hexagonal nuts unless otherwise indicated.

UNFINISHED THREADED FASTENERS: Comply with ASTM A307, Grade A, regular low-carbon steel bolts and nuts. Provide either hexagonal, or square, head and nuts, except use only hexagonal units for exposed connections.

ELECTRODES FOR WELDING: Comply with AWS Code, using ASTM A233 E-70 series electrodes.

Provide templates for precise location of anchor bolts and other items embedded in concrete foundations.

FABRICATION

Structural steelwork material shall be in accordance with the applicable provisions of the AISC Specification. Fabrication and assembly shall be done in the shop to the greatest extent possible.

Structural steelwork, except surfaces of steel to be encased in concrete surfaces to be field welded, shall be prepared for painting in accordance with the AISC Specification and primed with paint materials heretofore listed.

Bolts and washers of all types and sizes required shall be provided for completion of all field erection.

HIGH-STRENGTH BOLTED CONSTRUCTION: Install high-strength threaded fasteners in accordance with AISC "Specifications for Structural Joints using ASTM A325 or A490 Bolts", using A325N bolts unless noted otherwise.

WELDED CONSTRUCTION: Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welded work.

Assemble and weld built-up sections by methods which will produce true alignment of axes without warp.

Provide holes required for securing other work to structural steel framing, and for the passage of other work through steel framing members, as shown on the Final Shop Drawings. Provide threaded nuts welded to framing, and other specialty items as shown to receive other work.

Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.

SHOP PAINTING

Shop paint all structural steel work, except those members or portions of members to be embedded in concrete or mortar. Paint embedded steel which is partially exposed on the exposed portions and the initial 5 cm (2") of embedded areas only. Remove loose rust and mill scale by Hand Tool (SSPC-SP2) or Power Tool (SSPC-SP3) method. Prime with Tnemec 10-99 or Southern Coating RIP 1-0900 primer to minimum 2 mil dry thickness. See erection for field touch-up of primer.

PART THREE – EXECUTION

INSPECTION: Examine areas and conditions under which work of this Section will be performed. Correct conditions detrimental to proper execution of the work. Do not proceed until unsatisfactory conditions have been corrected.

PREPARATION: Clean concrete and masonry bearing surfaces free from bond-reducing materials, and then roughen to improve bond between bearing surfaces. Clean the bottom surfaces of base and bearing plates._

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FABRICATION

Furnish anchor bolts and other connectors required for securing structural steel to foundations and other in-place work.

Furnish templates and other devices necessary for presetting bolts and other anchors to anchorage locations.

Bases and bearing plates shall be shop-welded to columns and members attached to concrete and masonry. Install slide-bearing plates and protect against damage in accordance with manufacturer's written directions.

Splice members only where indicated unless, with the Architect's approval, splices not indicated would result in lower costs due to reduced shipping costs. Submit structural calculations signed by a structural engineer licensed in the State of Louisiana, for all splices not indicated.

Do not use gas cutting torches for correcting fabrication errors in the structural framing. Cutting will be permitted only on secondary members as acceptable to the Architect. Finish gas-cut sections equal to a sheared appearance with gas-cutting permitted.

ERECTION

Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Provide temporary guy lines to achieve proper alignment of the structures as erection proceeds.

Remove temporary connections and members when permanent members are in place and final connections are made.

Provide temporary planking and working platforms as needed for effective completion of the work of this Section.

Install anchor bolts and other connectors required for securing structural steel to foundations and other in-place work.

Clean concrete and masonry bearing surfaces free from bond-reducing materials, and then roughen to improve bond to surface. Clean the bottom surface of base and bearing plates. Set loose and attached base plates for structural members in wedges or other adjusting devices. Tighten anchor bolts after the supported members have been positioned and plumbed. Do no remove wedges or shims but, if protruding, cut off flush with the edge of the base or bearing plate prior to packing with grout. Pack grout solidly between surfaces and bases or plates to ensure that no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure in strict compliance with the manufacturer' s instructions as approved by the Architect.

Set structural frames accurately to the lines and elevations indicated. Align and adjust the various members forming a part of a complete frame or structure before fastening permanently. Clean the bearing surfaces and other surfaces which will be permanent contact before assembly. Perform necessary adjust for discrepancies in elevations and alignment. Level and plumb individual members of the structure within specified AISC tolerances.

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

All ASTM A325 bolts in structural connections shall be tightened using the "turn-of-the-nut-method" or Calibrated Wrench Method" as required by AISC "Structural Joints using ASTM A325 or A490 Bolts."

Slip joint bolts shall be tightened to a "snug fit" only and bolt threads burred or tack-welded to prevent loosening. Coat slip joint surfaces in contact with grease prior to bolt tightening.

FIELD TOUCH-UP: Inspect shop paint coat and touch up abrasions and paint all field welds to same standard as shop paint.

FIELD QUALITY CONTROL

HIGH-STRENGTH BOLT TEST: The testing and inspection agency shall inspect high-strength bolted connections and shall visually inspect field-welded connections, and shall prepare test reports for the Architect's review. The testing agency shall conduct and interpret the tests and shall state in each report whether the inspected work complies with the requirements and shall specifically state all deviations there from.

Ten (10%) percent of bolted connections shall be randomly selected for inspection by inspection agency. Agency shall tighten one bolt by "Turn of the nut method" or Calibrated Wrench Method" as required by AISC "Structural Joints Using A325 or 490 Bolts." The torque required to move this nut shall be used as the standard for the remainder to be tested. Movement of other test nuts before standard torque is reached shall constitute failure. If 5% of all nuts tested fail, then Contractor shall be required to test 100% of all high-strength bolts in all connections. All nuts and bolts failing shall be retightened and retested.

FIELD WELDING TESTS: All field welding shall be performed by “certified” welders. The Owner shall pay for all welding tests. A total of eight (8) shop welds shall be tested by “x” ray or ultrasonic, by an independent testing laboratory. A total of ten (10) field welds shall be tested by the ultrasonic or “x” ray method. If 10% of the tests are below 90% of that called for, all welds shall be tested and rewelded where required and retested until all welds pass.

CORRECTION: Correct deficiencies in structural steel work which inspections and test reports have indicated to be not in compliance with the specified requirements. Perform all additional tests required to reconfirm non-compliance of the original work and to show compliance of corrected work.

CLEAN-UP: Remove from the site and legally dispose of debris and waste materials resulting from operations under this section of the specifications.

END OF SECTION 05100

SECTION 05210 - STEEL BAR JOISTS

PART 1 - GENERAL

SECTION INCLUDES

A. Open Web Steel Joists.

1.2 RELATED SECTIONS

A. Section 03600 - Grout: Grouting base plates and bearing plates.

B. Section 05120 - Structural Steel: Superstructure framing.

C. Section 05311 - Steel Floor Deck: Support framing for openings less than 18 inches (450 mm) in decking.

D. Section 05312 - Steel Roof Deck: Support framing for openings less than 18 inches (450 mm) in decking.

E. Section 05500 - Metal Fabrications: Non-framing steel fabrications.

F. Section 06110 - Rough Carpentry: Joist chord wood nailers and blocking.

G. Section 07810 - Applied Fireproofing: Fireproof protection to joist framing systems.

H. Section 09900 - Painting: Finish painting.

1.3 REFERENCES

A. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges.

B. ASTM A 36/A 36M - Standard Specification for Carbon Structural Steel.

C. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

D. ASTM A 307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.

E. ASTM A 563 - Standard Specification for Carbon and Alloy Steel Nuts.

F. ASTM B 695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.

G. ASTM F 436 - Standard Specification for Hardened Steel Washers.

H. ASTM F 568M - Standard Specification for Carbon and Alloy Steel Externally Threaded Metric Fasteners

I. AWS D1.1 - Structural Welding Code - Steel

J. Steel Joist Institute (SJI) - Standard Specifications, Load Tables & Weight Tables for Steel Joists and Joist Girders.

K. SJI - Code of Standard Practice.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
  1. Preparation instructions and recommendations.
  2. Storage and handling requirements and recommendations.
  3. Installation methods.

C. Shop Drawings: Show steel joists and joist girders and related work, showing sizes, details of fabrication and construction, locations of hardware, anchors, bridging and accessories, and erection and installation details.

D. Welders' Certificates: Submit manufacturer's certificates, certifying welders employed on the Work, verifying AWS qualification within previous 12 months.

E. Certification: Submit evidence of SJI membership and that joists and joist girders have been designed in accordance with SJI requirements.

F. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
  1. Product Data for Credit MR 4.1 and MR 4.2: For products having recycled content, documentation including percentages by weight of post consumer and preconsumer recycled content
     a. Include statement indicating costs for each product having recycled content.
  2. Product Data for Credit MR 5.1 and Credit MR 5.2: Submit data, including location and distance from Project of material manufacturer and point of extraction, harvest or recovery for main raw material.
     a. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.

G. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Member of the Steel Joist Institute who regularly produces steel joists of the K, LH, or DLH Series, or joist girders conforming to SJI's Specifications and Load Tables and whose designs have been checked and accepted by the Steel Joist Institute.

B. Design connections under direct supervision of Professional Engineer experienced in design of this Work and licensed at Project location.

C. Perform Work in accordance with SJI, Standard Specification, Code of Standard Practice, Load Tables, and Weight Tables, including headers and other supplementary framing.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Deliver, store and handle as recommended by the SJI Specifications and Code of Standard Practice,

1.7 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: New Millennium Building Systems

B. Vulcraft Bar Joist

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 PRODUCTS

A. Provide Steel Joists in conformance with SJI - Standard Specifications, Load Tables & Weight Tables for Steel Joists and Joist Girders.

B. Open Web Joists Members: SJI Type
   1. Open Web Steel Joists (K Series).

C. Bridging: Provide bridging of material, size, and type required by SJI Standard Specifications for type of joist, chord size, spacing, and span.

D. Furnish ceiling extensions, where indicated on the Drawings, either extended bottom-chord elements or a separate extension unit to support ceiling construction load indicated on the Drawings. Extend ends to within 1 inch (25 mm) of finished wall surface unless otherwise indicated.

E. Carbon-Steel Bolts and Threaded Fasteners: ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6), carbon-steel, hex-head bolts and threaded fasteners; carbon-steel nuts; and flat, unhardened steel washers.

1. Finish: Plain, uncoated.
2. Finish: Hot-dip zinc coating, ASTMA153/A153M, Class C
3. Finish: Mechanically deposited zinc coating, ASTM B 695, Class 50.

F. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.
1. Finish: Plain, uncoated.
2. Finish: Hot-dip zinc coating, ASTMA153/A153M, Class C
3. Finish: Mechanically deposited zinc coating, ASTM B 695, Class 50.

G. Furnish miscellaneous accessories including splice plates and bolts required by joist manufacturer to complete joist assembly.

H. Welding Materials: AWS D1.1; type required for materials being welded.

2.3 FINISH

A. Steel joists and joist girders shall be properly cleaned and primed with one coat of manufacturer's standard shop primer in accordance with the SJI Standard Specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not install joists until supporting construction is in place.

B. If supporting construction is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions in accordance with SJI Standard Specifications.

3.3 INSTALLATION

A. Install in accordance with SJI Standard Specifications.

B. Erect steel joists and joist girders as indicated and in accordance with the reviewed and accepted submittals and the SJI Standard Specifications and Code of Standard Practice for the type of joists and joist girders indicated. Conform also with applicable requirements of AISC Specifications for Structural Steel Buildings - Allowable Stress Design and Plastic Design.

C. Align and adjust joists and joist girders accurately before fastening. Tolerances shall conform with AISC Code of Standard Practice for Steel Buildings and Bridges. Fastening of splices of compression members shall be performed after the abutting surfaces have been brought into contact. Bearing surfaces and surfaces that will be in permanent contact shall be cleaned before the members are assembled. Splices will be permitted only where indicated.

D. Set joists and joist girders accurately at the established lines and levels. Joists and joist girders shall be plumb and level (with indicated allowance for camber) before bolting is commenced. Temporary bracing shall be provided as required and shall be kept in position until completion of erection, anchorage, and bridging installation.

E. Frame openings greater than 18 inches (450 mm) with supplementary framing.

F. Do not permit erection of decking until joists are properly bridged and secured.

G. Install horizontal bridging for top and bottom chords as indicated and in accordance with the SJI Standard Specifications and Code of Standard Practice.

H. Do not field cut or alter structural members without approval of Architect/Engineer.

3.4 FIELD QUALITY CONTROL

A. Section 01400 - Quality Requirements: Field inspection of members, connections, welds, and tightening of high strength bolts in slip-critical connections.

3.5 TOUCH UP AND CLEANING

A. After erection, spot prime and touch up all field bolts, field welds, and abrasions to the shop coat. Clean surfaces properly as required for primer adherence and as required to prevent corrosion. Use same primer as was used for shop priming.

3.6 PROTECTION

A. Protect installed products until completion of project.

END OF SECTION 05210

SECTION 05500 – METAL FABRICATIONS

PART ONE – GENERAL

DESCRIPTION

Provide metal fabrications as shown on drawings and specified herein.

WORK INCLUDES:

Items shop fabricated from stock sections and miscellaneous factory-made metal items furnished under this Section but installed under other Sections. The schedule shows kinds of items included in this Section but installed under other Sections. The schedule shows kinds of items included in this Section but is not intended as a complete listing. Items described are generally those items not detailed on drawings, or if detailed, required amplification. Consult drawings for full extent of work required under this Section.

Providing and setting structural shapes, such as angles, channels, or plates shown to be built-in or anchored into concrete for attachment of other work.

Providing all anchors, sleeves, screws, bolts and connecting members necessary for securing metal work to other adjacent or adjoining work.

Providing and installing angles, lintels, and other reinforcement.

Furnish and install all metal handrails indicated on Drawings.

Furnishing all necessary patterns and templates.

Furnishing to various trades, where needed, sockets, anchors, and other portions of this work that are to be built into structure, and supervising and being responsible for their accurate spacing and setting.

RELATED WORK SPECIFIED ELSEWHERE

General & supplementary Conditions, Special Requirements
Hangers & Supports for Plumbing Work: Division 15
Hangers & Supports for HVAC Work: Division 15
Hangers & Supports for Electrical Work: Division 16

QUALITY ASSURANCE

Materials shall be best of their kind for purpose intended. Materials not specifically described shall be manufacturer's standard for first quality.

SUBMITTALS

Submit shop drawings showing gauges, thicknesses, sizes and construction of members and manner assembling various members which make up different items. Show true profiles, connections and relationship to adjoin work, methods of anchoring, and other pertinent information.

JOB CONDITIONS

Coordinate with trades furnishing items, which will attach to built-in members for proper positioning.

Furnish in ample time; anchors, bolts, inserts, clips and other items furnished under this Section but built in with work of other trades.

No work shall be fabricated or delivered to site until shop and detail drawings for the work have been approved.

PART TWO - PRODUCTS

MATERIALS

STEEL: ASTM A36 unless indicated otherwise on drawings.

GALVANIZING OR ZINC COATING: ASTM A123 or A386 as applicable and observing precautions in ASTM Recommended Practices A384 and A385.

PAINT FOR SHOP APPLICATIONS: Prime with Tnemec 10-99 or Southern Coatings RIP 1-0900 primer to minimum 2 mil dry thickness.

FABRICATION

Form metals to shape and size, with sharp lines and angles, and with smooth surfaces and faces. Shearing and punching shall leave clean true lines and surfaces, free from distortion. Weld or bolt permanent connections with bolts in finished work countersunk. Do not use screws unless specifically shown or required. If used, they shall be countersunk stainless steel or metal compatible with members being joined. Mill fastenings to a close fit. Provide necessary rabbets, lugs and brackets, etc., so work can be assembled neatly. Thickness of metals and

details of assembly and supports shall provide ample strength and stiffness. Built-up parts shall be out of wind. Form joint exposed to weather to exclude water. Countersink and recess to receive hardware. Provide with proper bevels and clearances.
Use plug welds wherever practicable in work exposed to view. Use fillet welds only where plug welding is impractical. Where welds are exposed flush and smooth, level with adjacent surfaces so that resultant weld provides appearance and strength of a continuous member of uniform thickness. Grind welds at intersecting members to straight lines.

CLEANING STEEL: Remove loose rust and mill scale by Hand Tool (SSPC-SP-2) or Power Tool (SSPC-SP3) method.

PRIME FERROUS METAL: Do not shop galvanized items. Apply 2 shop coats to parts of miscellaneous items which will be inaccessible after assembly.

Where two coats of primer are required, tint second coat a recognizable different shade. Before shipment, clean and touch up welds and abrasions on galvanized items with zinc-rich paint.

PART THREE - EXECUTION

INSPECTION

Inspect, field measure and verify that conditions are acceptable for installation of work.

INSTALLATION

Erect metal items in proper position, securely fastened, plumb, in line, and level, free of sharp edges and rough spots and in accordance with approved shop drawings.

Do cutting, drilling, or modifying of adjacent or adjoining work where necessary for proper installation.

Set hardware that is shop-installed. Do fitting true to line.

Bend or form tubing, pipe and other members to continuous and true curves, with joints flush, hairline, neatly fastened together and assembled to other materials.

Touch up abrasions and metal cuts, bolts and nuts with material used for shop priming so that entire assembly as erected presents a complete smooth prime coat of paint.

SCHEDULE OF FABRICATIONS

LOOSE LINTELS: Of sizes shown or required, minimum 8” bearing on each side of masonry opening. Lintels furnished under this Section but installed under Masonry: Division 4. U-block lintels minimum bearing 8” on each side of concrete masonry opening.

END OF SECTION 05500

SECTION 06100 - ROUGH CARPENTRY

PART ONE - GENERAL

DESCRIPTION

Provide rough carpentry required to complete the work, including, but not limited to:

Studs, joists, headers, bracing, supports and shoring required to support construction during formative stages.

Forming block-outs and setting inserts into concrete to accommodate fastenings.

Framing openings in and providing forming and supports for concrete lintels in concrete and masonry.

Providing all nailers, wood blocking and plywood in connection with metal decks, copings, roofing's and fascias.

Installation of metal door frames.

Providing openings, nailers, furring and grounds for items specified in other sections and indicated on drawings.

Installing blocking and concealed back-up for grab bars and handrails. Installing anchors, inserts, fasteners and other items furnished under other sections.

Coordinating and framing as required for installation and support of Plumbing, Heating, Ventilating, Air Conditioning and Electrical work.

Furnishing and setting of all rough hardware, such as shoes, dogs, spikes, bolts, stirrups, nails, lag screws, lagging bolts, anchors, etc., as indicated or required to hold woodwork together or to anchor or secure it to other materials and construction.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Concrete Formwork: Section 03100
Finish Carpentry: Section 06200
Hollow Metal Frames: Section 08110
Painting: Section 09900
Miscellaneous Specialties: Division 10

QUALITY ASSURANCE

Lumber Grading rules and Wood Species to be in conformance with American Softwood

Lumber Standard PS2O.

Grading rules of following associations apply to materials furnished under this Section:

Southern Pine Inspection Bureau (SPIB)
Western Wood Products Association (WWPA)
Softwood Plywood-Construction and Industrial PSI

Each piece of lumber and plywood shall have grade marked by association having jurisdiction under whose grading rules it is produced.

Preservative Treatment: AWPB Standards LP-2, above ground use.

Fire Hazard Classification: Underwriters' Laboratories, Inc., for treated lumber and plywood.

SUBMITTALS

PRESSURE TREATED WOOD: Submit certification by treating plant stating chemicals and process used, net amount of salts retained, and conformance with applicable standards.

PRESERVATION TREATED WOOD: Submit certification for water-borne preservative that moisture content was reduced to 19% maximum, after treatment.

PRODUCT DELIVERY, STORAGE AND HANDLING

Immediately upon delivery to job site, place materials in area protected from weather.

Store materials a minimum of 6" above ground on framework or blocking and cover with protective waterproof covering providing for adequate air circulation or ventilation.

Do not store seasoned materials in wet or damp portions of building. Protect sheet materials from corner breaking and damaging surfaces, while handling.

MATERIALS

LUMBER

Dimensions indicated and specified are nominal. Actual sizes to conform to N.B.S. PS20. Where dimensions are not indicated, sizes to be selected to meet structural requirements of strength and stiffness, subject to approval of Architect. End jointed lumber not acceptable.

MOISTURE CONTENT: 19% Maximum for air-dried stock.

SURFACING: Surface four sides. (S4S).

LUMBER GRADES: No. 2 grade or better Southern Pine or Douglas Fir standard grade.

PLYWOOD

GENERAL: Identify each panel with appropriate grade-trademark of American Plywood Association. Thickness as indicated on drawings. If none indicated, thickness shall be as required for span and loading.

EXTERIOR USE: N.B.S. PS 1 plywood, Construction, Group I, CD with exterior glue.

INTERIOR USE: CD grade.

OTHER MATERIALS

BUILDING PAPER: Asphalt-saturated felt; ASTM D226, No. 15 non-perforated.

PRESERVATIVE TREATED WOOD: Water-borne salt preservatives, AWPB LB-2,above ground application. Each piece to bear mark identifying treatment. “Osmose K-33” manufactured by Osmose Wood Preserving Co., Buffalo, N.Y., or Wolmanized” by Koppers acceptable.

ROUGH HARDWARE

Provide rough hardware, including nails, screws, bolts, anchors, ties and metal fastenings as required for proper construction and erection of work, or proper type and size suitable for purpose intended and approved by Architect.

PART THREE – EXECUTION

INSPECTION

Verify that surfaces to receive rough carpentry materials are prepared to required grades and dimensions.

Do not proceed until all unsatisfactory conditions are corrected.

PREPARATION

Verify that all items requiring priming are painted before installation.
Verify correct location of pre-set anchor bolts and other features

Verify locations and sizes of openings required by other sections of the specifications.

Verify locations of blocking and reinforcement for grab bars, handrails, and any other specialty item included in Division 10.

INSTALLATION

FRAMING: Studs, openings, blocking, rough bucks, nailers, grounds, furring and back-up for items furnished under other sections in accordance with manufacturer's recommendations and approved shop drawings.

Lay out, cut, fit and erect other rough carpentry as indicated on drawings and required.

Brace, plumb and level members in true alignment and rigidly secure in place with sufficient nails, spikes, screws and bolts as necessary.

BLOCKING: Install blocking to provide rigid and secure backing as detailed and necessary.

Wedge, align, and anchor blocking with countersunk bolts, washers and nuts or nails.

Locate blocking to facilitate installation of finishing materials, fixtures, specialty items and trim.

Install 2x blocking halfway between bottom & top plates of all load bearing and fire rated walls.

FURRING: Provide headers and other nailing members within furring framework. Install and shim furring to provide faces true to line and plumb.

ROUGH BUCKS: Provide rough wood bucks for all openings as indicated and required.
Securely anchor in place with 3/8" bolts and washers at 36" o.c. max. and 6" max. from ends.
Countersink bolt heads as required or indicated.

GROUNDS: Provide grounds as indicated and required including those for Mechanical and Electrical ceiling and wall items.

NAILERS ON MASONRY OR STEEL: Anchor nailers resting on masonry or steel with 3/8" bolts and washers at 36" o.c., unless indicated otherwise. Countersink bolt heads as required or indicated.

FASTENINGS TO CONCRETE OR MASONRY: Use power-actuated steel nails, expansion screws, toggle bolts, metal plugs, or metal inserts for installation or rough carpentry members to masonry or concrete construction.

Do not use wood plugs or nailing blocks for fastening grounds, or furring to concrete or masonry.

MASONRY OPENINGS: Wood centering or other necessary supports for openings in masonry walls shall be accurately and strongly made, properly braced and secured into position until masonry has thoroughly set.

TEMPLATES AND MEASURING BOXES: Provide all necessary templates and measuring boxes as required.

PRESERVATIVE-TREATED WOOD PRODUCTS: Provide preservative-treated wood in following locations:

All lumber used in exterior wall or other exterior construction.

All plywood used in exterior construction.

All lumber used in connection with concrete, masonry or steel.

All wood used in roof construction including fascia backup, cants, nailers and runners at mechanical units.

Apply two brush coats of same preservative used in original treatment to all sawed or cut surfaces of treated lumber.

PROTECTION

Protect masonry and concrete subject to damage during work, including edges of sills, concrete slabs, concrete steps, platforms and similar items, remove such protective covering when directed.

CLEAN-UP

Pick up cuttings and debris normal to this operation daily and store in areas safely removed from the building or in fire-proof containers.

END OF SECTION 06100

SECTION 06176 – METAL PLATE CONNECTED WOOD TRUSSES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes wood roof, and floor trusses and truss accessories.

B. Related Sections include the following:

1. Division 6 Section "Rough Carpentry" for roof sheathing and subflooring and dimension lumber for supplementary framing and permanent bracing.

1.3 DEFINITIONS

A. Metal-Plate-Connected Wood Trusses: Planar structural units consisting of metal-plate-connected members fabricated from dimension lumber and cut and assembled before delivery to Project site.

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

1. WCLIB - West Coast Lumber Inspection Bureau.
2. WWPA - Western Wood Products Association.

1.4 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal-plate-connected wood trusses capable of withstanding design loads within limits and under conditions indicated.

1. Design Loads: As indicated.

1.5 SUBMITTALS

A. Product Data: For metal-plate connectors, metal framing anchors, bolts, and fasteners.

B. Shop Drawings: Show location, pitch, span, camber, configuration, and spacing for each type of truss required; species, sizes, and stress grades of lumber; splice details; type, size, material, finish, design values, orientation, and location of metal connector plates; and bearing details.

1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Product Certificates: For metal-plate-connected wood trusses, signed by officer of truss fabricating firm and stamped by a Utah Professional Engineer..

D. Qualification Data: For metal-plate manufacturer, professional engineer, fabricator, and Installer.

E. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:

1. Metal-plate connectors.
2. Metal framing anchors.

1.6 QUALITY ASSURANCE

A. Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with TPI quality-control procedures for manufacture of connector plates published in TPI 1.

1. Manufacturer's responsibilities include providing professional engineering services needed to assume engineering responsibility.
2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.

B. Source Limitations for Connector Plates: Obtain metal connector plates through one source from a single manufacturer.

C. Comply with applicable requirements and recommendations of the following publications:

1. TP1 1, "National Design Standard for Metal Plate Connected Wood Truss Construction."
2. TPI DSB, "Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses."
3. TPI HIB, "Commentary and Recommendations for Handling, Installing & Bracing Metal Plate Connected Wood Trusses."

D. Wood Structural Design Standard: Comply with applicable requirements in AFPA's "National Design Specifications for Wood Construction" and its "Supplement."

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with TPI recommendations to avoid damage and lateral bending. Provide for air circulation around stacks and under coverings.

B. Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

1.8 COORDINATION

A. Time delivery and erection of trusses to avoid extended on-site storage and to avoid delaying progress of other trades whose work must follow erection of trusses.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. Metal Connector Plates:

   a. Alpine Engineered Products, Inc.
   b. CompuTrus, Inc.
   c. Eagle Metal Products.
   d. Jager Industries, Inc.
   e. Mitek Industries, Inc.
   f. Robbins Engineering, Inc.
   g. TEE-LOK Corporation.
   h. Truswal Systems Corporation.

2. Metal Framing Anchors:

   a. Alpine Engineered Products, Inc.
   b. Cleveland Steel Specialty Co.
   c. Harlen Metal Products, Inc.
   d. KC Metals Products, Inc.
   e. Silver Metal Products, Inc.
   f. Simpson Strong-Tie Company, Inc.
   g. Southeastern Metals Manufacturing Co., Inc.
   h. United Steel Products Company, Inc.

2.2 DIMENSION LUMBER

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Provide dressed lumber, S4S, manufactured to actual sizes required by DOC PS 20 for moisture content specified.
3. Provide dry lumber with 19 percent maximum moisture content at time of dressing.

B. Grade and Species: Provide visually graded dimension lumber for truss chord and web members, of the following grade and species:

1. Grade for Chord Members: As indicated.

2. Species: Douglas fir-larch; WCLIB or WWPA.

2.3 METAL CONNECTOR PLATES

A. General: Fabricate connector plates to comply with TPI 1 from metal complying with requirements indicated below:

B. Hot-Dip Galvanized Steel Sheet: ASTM A 653, G60 coating designation; Designation SS, Grade 33, and not less than 0.036 inch thick.

C. Electrolytic Zinc-Coated Steel Sheet: ASTM A 591, 80Z coating designation; ASTM A 570, Structural Steel (SS), Grade 33, and not less than 0.047 inch thick.

D. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792, AZ50 coating designation; Structural Steel (SS), Grade 33, and not less than 0.036 inch thick.

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 trusses are exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153.

B. Nails, Wire, Brads, and Staples: FS FF-N-105.

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

D. Wood Screws: ASME B18.6.1.

E. Lag Bolts: ASME B18.2.1..

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

G. 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.

2.5 METAL FRAMING ANCHORS

A. General: Provide framing anchors made from metal indicated, of structural capacity, type, and size indicated, and as follows:

1. Research/Evaluation Reports: Provide products acceptable to authorities having jurisdiction and for which model code research/evaluation reports exist that show compliance of metal framing anchors, for application indicated, with building code in effect for Project.
2. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

B. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

2.6 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: SSPC-Paint 20 or DOD-P-21035, with dry film containing a minimum of 94 percent zinc dust by weight.

2.7 FABRICATION

A. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints.

B. Fabricate metal connector plates to sizes, configurations, thicknesses, and anchorage details required to withstand design loads for types of joint designs indicated.

C. Assemble truss members in design configuration indicated; use jigs or other means to ensure uniformity and accuracy of assembly with joints closely fitted to comply with tolerances in TPI 1. Position members to produce design camber indicated.

1. Fabricate wood trusses within manufacturing tolerances in TPI 1.

D. Connect truss members by metal connector plates located and securely embedded simultaneously in both sides of wood members by air or hydraulic press.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install wood trusses only after supporting construction is in place and is braced and secured.

B. Before installing, splice trusses delivered to Project site in more than one piece.

C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.

D. Install and brace trusses according to TPI recommendations and as indicated.

E. Install trusses plumb, square, and true to line and securely fasten to supporting construction.

F. Space trusses as indicated; adjust and align trusses in location before permanently fastening.

G. Anchor trusses securely at bearing points; use metal framing anchors. Install fasteners through each fastener hole in metal framing anchor according to manufacturer's fastening schedules and written instructions.

H. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.

  1. Install and fasten strongback bracing vertically against vertical web of parallel-chord floor trusses at centers indicated.

I. Install wood trusses within installation tolerances in TPI 1.

J. Do not cut or remove truss members.

K. Replace wood trusses that are damaged or do not meet requirements.

  1. Do not alter trusses in field.

3.2 REPAIRS AND PROTECTION

A. Repair damaged galvanized coatings on exposed surfaces with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

END OF SECTION 06176

SECTION 06200 - FINISH CARPENTRY

PART ONE - GENERAL

DESCRIPTION

Provide finish carpentry required to complete the work indicated on the drawings and specified herein, including, but not limited to:

Furnishing and installing metal items such as angles, braces, lintels, clips, plates and stiffeners required in construction and installation of millwork items and cabinetwork.

Installing finish hardware specified in Section 08710.

Installing doors specified in Division 8 except aluminum entrance doors.

Installing miscellaneous specialty items specified in Division 10 and shown on drawings.

Setting and installing grilles, register faces and like items applied to woodwork.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Rough Carpentry: Section 06100
Hollow Metal Doors: Section 08110
Finish Hardware: Section 08710
Back-priming and Painting: Section 09900
Specialty Items: Division 10

OUALITY ASSURANCE

All millwork shall conform to the "Quality Standards" of the Architectural Woodwork Institute, latest edition for "Custom" Grade Work unless specifically indicated otherwise.

Following grading rules and standards, latest edition, apply to materials furnished under this Section:

LUMBER:
Southern Pine Inspection Bureau (SPIB)
Western Wood Products Association (WWPA)
National Hardwood Lumber Association (NHLA)

PLYWOOD:
Softwood Plywood: PS 1
Hardwood Plywood: PS5 1

PARTICLE BOARD: CS236

HIGH PRESSURE PLASTIC LAMINATE: NEMA Publication LD3

SUBMITTALS

Submit shop drawings for all millwork, identified with location, quality grade, type of finish and species of wood.

Show millwork in related and dimensional position and furnish large scale sections and details.

The drawings shall indicate all types of fastening and anchoring devices.

The mill shall be responsible for details and dimensions not controlled by job conditions.

Show all required field measurements beyond control of the mill.

The Contractor shall verify that all items will clear all obstructions between millwork shop and final location on job. Should any items as designed and detailed on drawings not clear all obstructions, Contractor shall so notify Architect in writing when shop drawings are submitted for Architect's review.

PRODUCT DELIVERY, STORAGE AND HANDLING

Do not deliver millwork in foggy or rainy weather.

Store millwork off the ground and properly supported in ventilated, weather-tight enclosure to prevent damage by excessive changes in moisture content.

Handle millwork in manner to prevent damage.

Receive, store and be responsible for finish hardware from time received until project is accepted. Check hardware when delivered for agreement with hardware schedule and promptly report errors or discrepancies to architect.

Store hardware off floor in weather-tight enclosure and handle in manner to prevent damage.

PART TWO - PRODUCTS

MILLWORK QUALITY GRADE

Materials and Fabrication: Custom grade for all finishes, unless specifically indicated otherwise, in accordance with “Quality Standards Illustrated” of the Architectural Woodwork Institute, latest edition, conforming to the following sections:

Section 100 - Solid wood members.
Section 200 - Plywood and particle board (no Fiberboard shelving permitted).
Section 300 - Standing and running trim.
Section 600 - Closet and storage shelving (no Fiberboard shelving permitted).

MATERIALS

PARTICLE BOARD: Mat-formed wood particle board, 45# density, CS236.

FASTENERS AND ANCHORING DEVICES: Of types and sizes appropriate for specific work. All exterior fasteners shall be non-ferrous. “Tapcon” masonry and concrete anchors, products of Buildex, shall be installed in accordance with manufacturer’s recommendations.

HARDBOARD: PS58, tempered, 1/4” thick unless indicated otherwise.

INTERIOR WOODWORK: Grade marked WWPA, B and better, Piranha Pine.

INTERIOR PLYWOOD: 3/4” thick unless noted otherwise. Select white birch one piece face. Interior type A-A, where both sides will be exposed to view. Interior type A-B, where only one side will be exposed to view. Hardwood edgebands exposed to view

PLASTIC LAMINATE: General purpose 1/16” thick, color as selected by Architect, as manufactured by Nevemar or Formica Corp. Co. Selected from standard wood grains, patterns, & color grid system.

CABINET WORK:

.1 - All cabinet exposed faces: select white birch one piece face. Conform to Section 400 AWI custom standards.

.2 - Interior fixed shelving at all cabinets - 3/4” A-B fir paint grade.

.3 - Cabinet doors and drawers - select white birch one piece face. Hardwood

Edge molding to match wood face of cabinet.

.4 - Cabinet backs - 1/4” plywood.

.5 - Cabinet sides and bottoms - 3/4” plywood. Sides exposed to view shall be 3/4” select white birch one piece face.

.6 - Drawer bottoms - 1/4” plywood.

.7 - Drawer sides - 3/4” plywood.

CABINET HARDWARE:

.1 - All drawers to have KV 1300 type drawer slides.

.2 - All door and drawer pulls and door hinges as specified under Section 06402.

EXPOSED SHELVING AND DIVIDERS:

Interior type plywood, select white birch one piece face, and white birch edge strip on front edge. 3/4” thick.

UNEXPOSED SHELVING (CLOSETS AND STORAGE ROOMS):

Interior type, grade A-B fir 3/4” thick.

<u>FABRICATION</u>

Fabricate millwork in accordance with “Quality Standards Illustrated” of AWI, 1968 edition, “custom” standards.

Support interior shelves on securely fastened continuous cleats or as indicated. (Adjustable standards recessed in stiles or casework sides.)

1 - Drive all power driven “T” head nails or staples where permitted on exposed surfaces with long dimension parallel with the exposed grain.

Install built-in hardware, hinges, pulls, knobs, slides and catches as specified under this section and Finish Hardware.

Install and prepare wood that would normally be exposed to view to properly receive finish as specified. Thoroughly sand after edgebanding to receive unified stained finish.

PART THREE - EXECUTION

INSPECTION

Examine all surfaces and materials to which finish carpentry items are to be applied.

Insure that surfaces and conditions of all materials to receive finish carpentry work are satisfactory to obtain specified results.

Verify that door frames are plumb, level, square, straight and aligned. Insure that all hardware provisions conform with approved shop drawings.

Do not proceed until all deficiencies are corrected.

PREPARATION

Verify that all wood trim and built-in millwork and cabinetwork surfaces, which will be concealed after installation, are back-primed before installing.

INSTALLATION

Install millwork and cabinetwork in a manner consistent with the quality of the specified grade and in accordance with approved shop drawings.

MILLWORK:

Finished woodwork shall be properly framed, closely fitted and accurately set to required lines and levels and rigidly secured in place.

Millwork shall be carefully put up, in the best and most rigid manner, straight, plumb level and in true alignment, neatly and accurately fitted arid scribed. Miters or other fitted joints shall be planed and sanded.

Nail and screw heads exposed in the work shall be countersunk, except where nature or thickness of wood does not permit. Work shall be left clean and free from warp, twist, open joints and other defects. Neatly scribe around pipes and other obstructions to fit work, and furnish and install fillers as necessary.

Cutting and repairing of this work for accommodation of the work of others shall be done as part of the work of this section unless otherwise specified.

Make joints in woodwork tight, formed to conceal shrinkage. Interior corners shall be coped, and external angle joints shall be mitered. Make joints on the miter except where shown to be butt-jointed, in which case use an approved device to prevent separation.

Make the minimum number of splices in running finish, beveled and jointed where solid fastening can be made. Butt joints in running finish will not be permitted.

Sink nail heads in finished work with a nail set. Nails and screws where possible, shall be concealed. Nails shall be blind-nailed wherever possible; otherwise, nailing shall be located and driven so as not to be visible in finish. Countersink face screws and plug with matching wood.

Metal items exposed in finished work shall be smooth, without burrs or irregularities. Screws or bolts shall be countersunk.

CABINETWORK:

All anchors and fasteners for cabinet shall be concealed.

DOORS:

Field fit and hang wood, plastic faced and hollow metal doors.

FINISH HARDWARE:

Fit hardware prior to application of painter's finish, remove during finishing operation and reset after completion of finish.

Protect metal knobs and handles by wrappers of tough paper or cloth maintained in place until acceptance of work. Take care not to mar or damage other work. Locate and position in accordance with Architect's directions. Upon completion of work, in presence of Architect, show that hardware works freely.

In setting thresholds, drill as necessary for fastening and set thresholds in full beds of oleo-resinous caulking compound.

MISCELLANEOUS SPECIALTY ITEMS:

Install specialty items in accordance with approved shop drawings. Verify all locations and elevations prior to installing.

Fasteners shall be recommended and/or provided by manufacturer of item and entirely suited for purpose.

HIGH PRESSURE PLASTIC LAMINATE:

Install in strict accordance with manufacturer's printed instruction and approved shop drawings.

PROTECTION OF WORK

Provide suitable protection for finished work and material. Replace or repair to Architect's approval all damaged work at no cost to Owner.

END OF SECTION 06200

SECTION 06240 – LAMINATED MODULAR MILLWORK

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

A. Drawings and provisions of the contract including General Conditions, Supplementary Conditions, and Division 1, apply to this section. This is a performance specification.

1.02 WORK INCLUDED:

A. Furnish and install high-pressure laminate casework and accessories as shown and listed on drawings and specified herein. Include all countertops, sink cutouts, splashes, supports, shelving, and filler panels necessary for a complete casework installation.

B. The CASEWORK CONTRACTOR shall verify all critical building dimensions prior to fabrication of casework. The CASEWORK MANUFACTURER shall re-engineer the casework arrangements to dimensions requiring 2-1/2" or less of filler at each end of wall to wall elevations, and to ensure a complete and satisfactory installation.

C. Provide all labor for unloading, distribution, and installation of casework and related items as specified.

1.03 WORK RELATED, NOT INCLUDED:

A. Division 6: Rough Carpentry-blocking within walls to adequately support casework. Finish Carpentry/Millwork. Architectural Woodwork.

B. Division 7: Joint Sealants-caulking of casework and/or countertops to abutting walls.

C. Division 8: Finish Hardware-cabinet locks keyed or master keyed to building locks.

D. Division 9: Resilient Base.

E. Division 15: Mechanical-furnishing, installation, and hook-up of sinks, fixtures, outlets, strainers, tailpieces, traps, vacuum breakers, stops, etc., shall be performed by the MECHANICAL CONTRACTOR to state and local codes. In all cases, sink cutouts shall be by the CASEWORK CONTRACTOR. Furnishings, installation, and final connections of all duct work to range hoods and spray booths shall be by the MECHANICAL CONTRACTOR.

F. Division 16: Electrical-furnishing, installation, and final connections of wiring, conduit, and/or electrical items within casework shall be performed by the ELECTRICAL CONTRACTOR to state and local codes.

1.04 STANDARD OF QUALITY:

A. Casework of other nationally recognized CASEWORK MANUFACTURERS may be considered for approval providing it is equal in construction and design according to drawings and specified herein. CASE SYSTEMS is used for the purpose of establishing quality of material, construction, and workmanship.

B. CASEWORK CONTRACTORS requesting approval to bid shall do so in writing, listing any and all deviations to the approval not less than ten days prior to bid date. As a means for evaluation, CASEWORK CONTRACTOR shall submit to the Architect a full scale base cabinet not less than ten days prior to bid date. The sample shall be typical for construction the CASEWORK CONTRACTOR proposes to meet the quality standards set forth by this specification. The sample may be impounded by the OWNER and retained until completion of the casework installation. CASEWORK CONTRACTORS seeking approval to bid shall submit evidence that the CASEWORK MANUFACTURER has adequate plant, equipment, and work force to produce the quality of casework specified and be able to deliver as scheduled.

C. The OWNER, or its designated representative, reserves the right to reject any proposal which in his opinion fails to meet the criteria established by this specification. Such a decision shall be final.

D. The CASEWORK MANUFACTURER AND CONTRACTOR shall guarantee casework materials and workmanship for THREE YEARS from the date of installation. Defects reported within the guarantee period will be corrected without charge and shall warranty against structural failure of the cabinet body for a period of TEN YEARS from the date of installation. Accessories, such as: sinks, fittings, apparatus, fume hoods, countertops, etc., shall be guaranteed for ONE YEAR from date of installation.

1.05 SUBMITTALS:

A. Comply with Division 1.

B. Product Data: submit CASEWORK MANUFACTURER'S catalog showing casework construction details, and materials and hardware used.

C. Submit colors as noted in 2.02.2, for exterior high-pressure decorative laminate color selections.

D. Submit interior samples in three colors: Light Beige, Greystone, and White.

E. Submit five sets of laser quality, 11" x 17" shop drawings consisting of:
   1. Color and Hardware options selection sheet
   2. Small scale floor plan showing casework in relation to the building
   3. Large scale elevations and plan views
   4. Cross-sections; service runs; blocking locations; and sink centerlines

F. Shop drawings to be submitted within 45 days of casework contract award.

PART 2 -- PRODUCTS

2.01 GENERAL:

A. Decorative laminate casework shall be Case Systems as specified or approved equal with the following minimum performance features:
   1. M-3 47# density engineered particleboard for all cabinet components
   2. PVC edges applied with hot melt
   3. Epoxy coated, self closing, minimum 150# static rated drawer slides with lifetime warranty
   4. Non-Racking, Non-Deflecting Platform Drawer Box With 1/2" Thick Bottoms
   5. 1/2" Thick Cabinet Back
   6. "Balanced" High pressure laminates applied with rigid PVA glue
   7. Thermally Fused Laminate Interior Which Exceeds NEMA LD3-1995 for GP-28 Performance

8. Each Cabinet to have a factory applied, separate and full support toe base construction
9. Colors and finishes to be available as specified in 2.01.B and 2.02
10. Casework shall be independently tested to meet the following minimum performance values:

Base Unit Racking	1460 lbf
Base Front Joint Loading	725 lbf
Wall Unit Racking	1600 lbf
Wall Unit Static Load	2500 lbf
Drawer Unit Static Load	1050 lbf
Drawer Front Joint Load	805 lbf
Drawer Side Joint Load	450 lbf

11. Rail mounted casework shall be vertically and horizontally adjustable.
12. Rail mounted casework shall have integral lower leveling bar, adjustable from inside of cabinet.

B. Color and finish selections shall be as follows:

1. Up to FIVE color schemes may be chosen for this project at no additional cost. Construction, hardware and finish options will be as specified. Where applicable, the colors of the finishes may change between the color schemes.

2.02 MATERIALS:

A. Exterior Vertical Surfaces:

1. All door and drawer fronts, finished end panels, and exposed exterior backs shall be surfaced with .028" thick high-pressure decorative laminate conforming to NEMA LD3-1995, GP-28.
2. Laminate Patterns, Woodgrains, and Solid Colors will be selected from Wilsonart, Formica, Nevamar or Pionite's current non-specialty, non-premium grade offerings in laminate manufacturer's standard suede, textured or matte finish. All laminate Patterns, Woodgrains and Solid Colors will be available for both cabinet and countertop selections.
3. Woodgrain direction shall be vertical on doors, end panels, and exposed backs; horizontal on drawer fronts and aprons.
4. All exterior vertical high-pressure laminate panels shall be balanced with textured .020" thick high- pressure cabinet liner conforming to NEMA Standard LD3-1995, CL-20. Color shall match interior, Light Beige, Greystone, or White. Surface texture shall be similar to exterior finish.
5. All high-pressure laminate must be laminated using a PVA adhesive, set under pressure, resulting in a rigid glue line. Contact adhesives shall not be used.

B. Thermally Fused Interiors at Semi-Exposed Surfaces:

1. Interior surfaces behind doors, drawer boxes, backs, and unfinished ends shall be laminated with a Light Beige, Greystone, or White thermally fused laminate that meets or exceeds the performance standards for NEMA LD3-1995 for GP-28. All panels shall be of "BALANCED" construction. Fast cycle thermally fused, melamine foil or polyester surfaced panels or other surface types that do not meet these

requirements are not acceptable. All 3 colors may be utilized within the FIVE color schemes.

C. 3mm & .020" PVC Edges:

1. Door and drawer edging shall be 3mm PVC. The PVC shall be applied utilizing hot melt adhesive and radiused by automatic trimmers. Hand tool applying and trimming of PVC shall not be allowed. Edging shall be available in TWENTY TWO coordinated color options. Any of the 22 colors may be utilized within the FIVE color schemes.

D. Postformed Vertical Door and Drawer Edges:

1. All vertical door and drawer edges shall have 90 degree, minimum 8mm radius, high pressure laminated postformed edges. Laminate shall conform to NEMA LD3-1995 PF-40. Top and bottom horizontal edges shall be finished as stated in 2.02.C.1. Hinges shall be concealed.
2. Other edges shall be machine applied color through .020" PVC. Cabinet body edges shall match the door/drawer edge color selection. The leading edge of adjustable shelves shall be edged with .020" PVC. Edge color for fixed shelves, spreaders, and shelves in open or glazed door cabinets shall match the cabinet box front edge color. Edge color for adjustable shelves behind solid doors shall match the cabinet interior color.

E. Particleboard:

1. All particleboard shall be Grade M-3 Industrial, according to the American National Standard (ANSI) for Mat-Formed Wood Particleboard, ANSI-A208.1-1993 and shall meet or exceed the following:

a.	Density	47 lbs/cu.ft.
b.	Moisture Content	6%
c.	Modulus of Rupture	2400 psi
d.	Modulus of Elasticity	450,000 psi
e.	Internal Bond	80 psi
f.	Hardness	900 pounds
g.	Linear Expansion	0.30%
h.	Thickness Tolerance	+/- 0.005"
i.	Face Screw Holding	325 pounds
j.	Edge Screw Holding	275 pounds

F. Hardware:

1. Pulls:
   a. One pull shall be located at the centerline of the drawer, regardless of width, to ensure ease of operation and maximize drawer slide life. A minimum of TWENTY-FOUR standard options shall be available. One selection from standard options per color scheme. Up to five total choices colors may be utilized within the FIVE color schemes.
2. 5 Knuckle Hinges / <u>Full Overlay</u>: (See 2.04.B for test criteria)

   a. Hinges shall be .95" steel five-knuckle hospital-tip institutional grade quality with .187" diameter tight pin. Hinge knuckle must be inset flush with the outside of door edge for a full overlay door style. Hinges not inset "SHALL NOT BE ACCEPTABLE". Hinges Residential, kitchen type pivot, plain butt, or hinges with removable pins "SHALL NOT BE ACCEPTABLE". Each hinge shall be secured with a minimum of nine No. 7 screws. Hinge shall permit door to swing 270 degrees without binding. Doors less than 48" in height shall have two hinges. Doors over 48" in height shall have three hinges. A minimum of three finishes shall be available. All 3 finishes are available for the FIVE color schemes.

3. Drawer Slides: (See 2.04.C for test criteria)
   a. Standard Drawer: Self-closing, bottom mount epoxy coated with captive roller and positive in stop. Slide shall have 100# dynamic and 150# static load rating, must be self closing within last 3" of travel, and must prevent drawer fronts from contacting the cabinet body.
   b. File Drawers: Full extension, bottom mount epoxy coated with captive roller and positive in-stop. Slide shall have 100# dynamic and 150# static load rating, must be full extension, and prevent drawer fronts from contacting the cabinet body.
   c. File drawer box shall be full height sides supporting a heavy-duty support rail for pendaflex type file folders. Painted steel supports or metal file frames set into the drawer are not acceptable.
4. Door Catches: (not used with self-closing hinges)
   a. Base and Wall Cabinets: 7 pound magnetic catch.
   b. Tall Cabinets: Heavy-duty spring loaded roller, with molded plastic bumper mounted at door bottom.
5. Adjustable Shelf Supports:
   a. Shelf supports shall be injected molded clear plastic, with a double pin engagement 32mm on center and shall have 3/4" and 1" anti-tip locking tabs.
6. Locks: (Where shown or noted only)
   a. National Lock five disc tumbler cam locks in chrome finish
   b. All locks keyed alike or keyed differently by room and master keyed.
   c. Lock core is removable with a control key, permitting OWNER to easily change lock arrangements without tools.
   d. Inactive door of base and wall cabinets shall be secured by using an elbow catch or a chain bolt for tall cabinets.
7. Rail Support System:
   a. Wall mounted continuous support rail and cabinet mounted interface hooks shall be anodized finished extruded aluminum.
   b. Wall mount support shall come factory pre-drilled 8" on center for mounting to 16" or 24" on center studs and in-wall blocking. Blocking is required per manufacturers' recommendations and is supplied and installed by specified trade.
   c. Cabinet interface hooks shall be pre-mounted at the factory with deep thread 7mm x 70mm specialty screws. Screws shall not be visible in cabinet interior.

Three hook styles shall be available for single, double and triple height adjustment based on the cabinet model number.

d. Cabinet Lower Leveling bar shall be adjustable from cabinet interior and shall allow for plus or minus 3/8” plumb adjustment without additional materials. Fixed plastic channels shall not be acceptable.
e. Recommended maximum load capacity for base cabinets with a 1 1/8” standard laminate countertop, wall cabinets and tall cabinets shall be 100 lbs per linear foot. Optional leg supports shall be available to accommodate heavier loads for tall and base rail cabinets.

2.03 CONSTRUCTION:

A. All cabinet body components shall be secured utilizing concealed interlocking mechanical fasteners as approved by the Architectural Woodwork Quality Standards 6th Edition -1994 Sections 1600A-S-10 and AWI 1600B-S-9. Also as approved by the Woodwork Institute of California’s “Manual of Millwork” Section 15.IX.A.e. They shall be especially designed for use in joining particleboard panels.

B. All joints are tight fitting and will not rupture or loosen due to the following:
   1. Dimensional changes in the particleboard.
   2. Racking of casework during shipment and installation.
   3. Normal use.
   4. Seismic shock as tested and approved by the Woodwork Institute of California for casework used in schools and hospitals.
   5. All fastening devices and screws shall be treated to deter or resist corrosion.

C. Construction Features -- All Cabinets:
   1. All structural components shall be 3/4” thick with balanced surfaces.
   2. All back panels shall be 1/2” thick surfaced both sides for balanced construction.
   3. All drawer components shall be 1/2” thick surfaced both sides for balanced construction.
   4. Mounting stretchers are 3/4” thick structural components fastened to end panels by mechanical fasteners, and are concealed by the cabinet back.
   5. When the rear of cabinets are exposed, a finished 3/4” thick decorative laminate back panel is applied.
   6. Exterior grade plywood core individual bases, factory applied to base and tall cabinets shall support and carry the load of the end panels, and the cabinet bottom, directly to the floor. The base shall be let in from the sides and back of the cabinet to allow cabinets to be installed tightly together and tight against a wall. Also to conceal the top edge of applied vinyl base molding. There shall be a front to back center support for all bases over 30” wide.
   7. Horizontal parting rails between drawers shall be 3/4” particleboard with balanced surfaces, secured to and further reinforcing cabinet ends. When drawers are keyed individually within a cabinet, or when drawers are fitted with lock hasps, the parting rail shall run full depth of cabinet to prevent pilfer.
   8. A 5mm diameter row hole pattern 32mm (1-1/4”) on center shall be bored in cabinet ends for adjustable shelves. This row hole pattern shall also serve for hardware mounting and replacement and/or relocation of cabinet components.

9. All door and drawer fronts and finished ends shall be balanced construction with "high-pressure" laminate bonded to both sides of a M-3, 47# particleboard core.
10. Adjustable shelves shall be particleboard core, balanced surfaces and have a .020" thick PVC front edge.
    a. Adjustable shelves, in a cabinet, over 33" wide shall be 1" thick.
    b. All adjustable shelves in open cabinets shall be 1" thick, except for special use cabinets such as mail, cubical or locker type units.
    c. All other shelves shall be 3/4" thick.
11. Fixed Interior Components such as fixed shelves, dividers, and cubicle compartments shall be full 3/4" thick particleboard attached with concealed interlocking mechanical fasteners.
12. All doors shall be a maximum of 24" wide. The height of any door shall not be greater than the width.

E. Wall Cabinets:
1. Each end panel to be secured with a minimum of seven interlocking mechanical fasteners for a total tensile strength of 2,450 pounds.
2. All wall cabinet bottoms shall be of 1" thick particleboard core mechanically fastened to end panels and secured to the bottom back stretcher.
3. An upper 3/4" thick stretcher shall be located behind the back panel with two interlocking mechanical fasteners per end. Also the stretcher is secured to the cabinet top with #8 x 2" plated flat head screws.
4. A lower 3/4" thick stretcher shall be located behind the back panel and attached to the end panels with interlocking mechanical fasteners. The stretcher is also secured to the cabinet bottom.

F. Base Cabinets:
1. Each end panel to be secured with a minimum of seven interlocking mechanical fasteners for a total tensile strength of 2,450 pounds.
2. All base cabinets, except sink cabinets, shall have a solid 3/4" thick sub-top fastened to the ends with interlocking mechanical fasteners.
3. All sink cabinets shall have a vertically mounted front stretcher panel supporting the countertop, a split removable back panel, and four steel corner gussets used to secure the counter-top.
4. An upper 3/4" thick stretcher shall be located behind the back panel and attached to the end panels with interlocking mechanical fasteners. This stretcher is also fastened to the full sub-stop thus capturing the back panel.

G. Tall Cabinets:
1. Each end panel to be secured with a minimum of eleven interlocking mechanical fasteners for a total tensile strength of 3,850 pounds.
2. An intermediate fixed shelf shall be provided on all general storage cabinets to maintain internal dimensional stability under heavy loading conditions.
3. An upper ¾" thick stretcher shall be located behind the back panel and attached to the end panels with interlocking mechanical fasteners. This stretcher is also fastened to the full sub-stop thus capturing the back panel.

4. An intermediate ¾” thick stretcher shall be located behind the back panel and be secured to the cabinet ends with interlocking mechanical fasteners. Where an intermediate shelf is present, the stretcher shall also be secured to the shelf with a #8 x 2 plated flat head screw.
5. Drawers with ¼” bottoms requiring hot melt glue or intermediate supports will not be permitted. No exceptions will be permitted.

H. Drawers:
1. Drawer box shall be constructed with a full 1/2” thick non-racking, non-deflecting platform bottom which is carried directly by “L” shaped, bottom mount drawer glides. Sides are secured with 1 1/4” long screws directly into platform and into the sides.
2. Sides, back, sub-front and bottom shall be 1/2” thick 47# density particleboard surfaced both faces with Light Beige, Greystone, or White thermally fused laminate per 2.02.B.1. The top edge shall be .020” PVC matching the drawer color.
3. Corners shall be joined with fluted hardwood dowels and glue, minimum 32mm o/c.
4. Drawer fronts shall be removable and attached drawer box sub-front with screws from inside of drawer.

2.04 PERFORMANCE:

A. Laminates:
1. “High Pressure Laminates” shall meet the definition and performance requirements of NEMA LD3-1995. Vertical grade laminate shall be GP-28 balanced with a minimum grade of CL-20. Countertops shall be GP-50 or PF-42 as specified.
2. Thermally Fused Laminate shall meet the performance requirements of NEMA LD3-1995 for GP-28. Cabinet manufacturer shall submit panel manufacturers’ current published specification stating ANSI core properties and NEMA finish properties.

B. Hinges:
1. ANSI 156.9.4.1,2,3,4: Two hinges mounted 23” on center on a 23-7/16” wide x 19-11/16” high cabinet door shall be capable of supporting a 100 pound test load located 1” from the outside edge of the door.
   a. Cycle, open and close, from 5 degrees open through 95 degrees open with no failure to hinges, door, or cabinet end panel. The maximum horizontal permanent hinge set shall not exceed .030”.

C. Drawers:
1. ANSI/BHMA A156.9-1988 4.11*: an actual production drawer box with an applied finished front and 450mm drawer slides mounted per the manufacturers’ instructions shall be tested as follows:
   a. Dynamic Cycle Test: When uniformly loaded with 100 pounds and tested through 50,000 opening and closing cycles, the drawer shall operate freely.
   b. Static Edge Load Test: When the drawer is fully extended, a 150 pound load shall be supplied to the drawer front at a point on the centerline of the drawer for one minute. No permanent damage or distortion shall occur.

   * see ANSIA156.9-1988 for specific grades and minimum requirements

E. Adjustable Cabinet Shelving:
   1. Shelving shall not deflect in excess of 1/4” when loaded as follows:
      a. Standard Shelving - 25 pounds/sq. ft.
      b. Library Shelving - 40 pounds/sq. ft.

F. Wall Hung Cabinet Load Test:
   1. Earthquake test procedure developed by the “Woodwork Institute of California” for casework used in California schools and hospitals.
      a. A 48” h x 12” d x 48” w wall hung cabinet using interlocking mechanical fastening devices shall support a 2,000 pound dead load concurrently with a 982 pound lateral pull out load. Test complies with loads specified in Title 17 with a safety factor of two.

2.05 COUNTERTOPS:

A. High-Pressure Decorative Laminate, Nominal 1 1/8” Thick: (Millwork only)
   1. General Purpose, GP-50 high-pressure decorative laminate on horizontal surface, conforming to NEMA Standard LD3-1995.
   2. Laminate Patterns, Woodgrains, and Solid Colors will be selected from Wilsonart, Formica, Nevamar or Pionite’s current non-specialty, non-premium grade offerings in laminate manufacturer’s standard suede, textured or matte finish.
   3. Laminate bonded to 1” thick 47# M-3 particleboard core with PVA rigid adhesives. Contact method shall NOT be allowed. Core shall be balanced with HPL backer.
   4. All joints shall be secured with adhesive and tight joint fasteners.
   5. Provide 4” high back splashes where shown and at all ends abutting walls and adjacent cabinets.
   6. Countertops shall conform to ANSI A161.2-1979 PERFORMANCE STANDARDS FOR FABRICATED HIGH-PRESSURE DECORATIVE LAMINATE COUNTERTOPS.
   7. Edges shall be 3mm radiused PVC, machine applied with hot-melt adhesives.

PART 3 -- EXECUTION

3.01 SHIPPING:

A. All casework shall be blanket wrapped and delivered to the jobsite in air-ride furniture vans.

3.02 CASEWORK INSTALLATION:

A. Casework shall <u>not</u> be delivered or stored at the jobsite until building has become adequately dry and secure. The ambient relative humidity must be maintained between 25% and 55% prior to delivery and through the life of the installation.

B. Installation shall be by CASEWORK MANUFACTURER’S authorized representative.

C. Casework is to be installed plumb and true, and is to be securely anchored in place. Scribe casework fillers as necessary for a tight fit.

D. Wall cabinets shall be securely fastened to horizontal blocking, not to plaster, lath, or wallboard. Reinforcement of stud walls shall be provided by appropriate trade during erection of walls. CASEWORK MANUFACTURER shall accurately locate blocking requirements on shop drawings.

E. Install countertops on base cabinets using screws.

3.03 CLEANING AND PROTECTION BY CASEWORK CONTRACTOR:

A. Empty drawers of dirt and dust. Wipe out cabinets interiors to remove dirt and dust. Remove pencil or other marks, excess adhesive, etc. from cabinets and countertops. Remove all packaging, scraps, and debris resulting from casework installation activities.

B. Make final adjustments to doors and drawers. Doors shall swing freely, catches shall hold securely, and all other doors shall be aligned both vertically and horizontally. Drawers shall open and close smoothly, without binding and without excessive slide play.

C. Keys shall be appropriately labeled and turned over to the Owner.

END OF SECTION 06240

SECTION 06652 - QUARTZ / GRANITE SURFACE FABRICATIONS

PART 1 — GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following horizontal and trim quartz surface product types:

1. Countertops with or without undermount bowls
2. Reception areas/nurses stations
3. Vanity tops
4. Tabletops
5. Bar tops
6. Seats
7. Cold cafeteria surfaces
8. Hot cafeteria surfaces
9. Windowsills
10. Interior steps

B. Related Sections include the following:

1. Division 1 Section "LEED Requirements" for additional LEED requirements.
2. Division 5 Section "Metal Fabrications" for Blocking.
3. Division 6 Section "Rough Carpentry" for Blocking.
4. Division 6 Section "Solid Surface Fabrications."
5. Division 9 Section "Solid Surface Wall Cladding."
6. Division 9 Section "Quartz Surface Wall Cladding."
7. Division 10 Section "Quartz Surface Toilet Partitions."
8. Division 15 Section "Plumbing Fixtures."
9. Division 16 Section "Wiring Devices."

C. Alternates:

1. Refer to Division 1 Section "Alternates" for description of work in this Section affected by alternates.

1.3 SUBMITTALS

A. Product data:

1. For each type of product indicated.

B. Shop drawings:

1. Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices and other components.
    a. Show the following:
        1) Full-size details, edge details, attachments, etc.
        2) Locations and sizes of furring, blocking, including concealed blocking and reinforcement specified in other Sections.
        3) Locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacle and other items installed in quartz surface.
        4) Seam locations.

C. Samples:
1. For each type of product indicated:
    a. Submit minimum 6-inch by 6-inch sample in specified color.
    b. Cut sample and seam together for representation of seaming techniques.
    c. Indicate full range of color and pattern variation.
2. Approved samples will be retained as a standard for work.

D. Product data:
1. Indicate product description, fabrication information and compliance with specified performance requirements.

E. LEED Submittals:

1. Credits MR 5.1:
    a. Product data indicating that materials are regionally manufactured and within 500 miles of the project site.

F. Product certificates:
1. For each type of product, signed by product manufacturer.

G. Fabricator/installer qualifications:
1. Provide copy of certification number.

H. Manufacturer certificates:
1. Signed by manufacturers certifying that they comply with requirements.

I. NSF/ANSI standards:
1. Refer to www.nsf.org for the latest compliance to NSF/ANSI Standard 51 for food zone — all food types.

J. Maintenance data:
1. Submit manufacturer's care and maintenance data.
    a. Maintenance kit for finishes shall be submitted.
2. Include in project closeout documents.

1.4 QUALITY ASSURANCE

A. Qualifications:
   1. Shop that employs skilled workers who custom fabricate products similar to those required for this project and whose products have a record of successful in-service performance.

B. Fabricator/installer qualifications:
   1. Work of this section shall be by a certified fabricator/installer, certified in writing by the manufacturer.

C. Applicable standards:
   1. Standards of the following, as referenced herein:
      a. American National Standards Institute (ANSI)
      b. American Society for Testing and Materials (ASTM)
      c. National Electrical Manufacturers Association (NEMA)
      d. NSF International
   2. Fire test response characteristics:
      a. Provide with the following Class A (Class I) surface burning characteristics as determined by testing identical products per UL 723 (ASTM E 84) or another testing and inspecting agency acceptable to authorities having jurisdiction.
      b. Flame Spread Index: 25 or less.
      c. Smoke Developed Index: 450 or less.

D. Allowable tolerances:
   1. Variation in component size: ±1/8" (3 mm) over a 10' length.
   2. Location of openings: ±1/8" (3 mm) from indicated location.
   3. Maximum 1/8" (3 mm) clearance between quartz surfaces and each wall.

E. Coordination drawings:
   1. Shall be prepared indicating:
      a. Plumbing work.
      b. Electrical work.
      c. Miscellaneous steel for the general work.
      d. Indicate location of all walls (rated and non-rated), blocking locations and recessed wall items, etc.
   2. Content:
      a. Project-specific information, drawn accurately to scale.
      b. Do not base coordination drawings on reproductions of the contract documents or standard printed data.
      c. Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements.
      d. Provide alternate sketches to designer for resolution of such conflicts.

1) Minor dimension changes and difficult installations will not be considered changes to the contract.

3. Drawings shall:
    a. Be produced in 1/2" scale for all fabricated items.
4. Drawings must be complete and submitted to the architect within 60 days after award of contract for record only.
    a. No review or approval will be forthcoming.
    b. Coordination drawings are required for the benefit of contractor's fabricators/installers as an aid to coordination of their work so as to eliminate or reduce conflicts that may arise during the installation of their work.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver no components to project site until areas are ready for installation.
B. Store components indoors prior to installation.
C. Handle materials to prevent damage to finished surfaces.
   1. Provide protective coverings to prevent physical damage or staining following installation for duration of project.

1.6 WARRANTY

A. Provide manufacturer's 10-year warranty against defects in materials.
   1. Warranty shall provide material to repair or replace defective materials.
   2. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.

1.7 MAINTENANCE

A. Provide maintenance requirements as specified by the manufacturer.

PART 2 — PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the requirements, provide the following product:
   1. Hanstone Steel Patina MV621 surfaces (basis of design) but other colors shall be selected by owner.
   2. Grade B granite is the basis of design for selection by owner if indicated.

2.2 MATERIALS

A. Material:
   1. Homogeneous quartz surfaces material.

2. Material shall have minimum physical and performance properties specified.

B. Thickness:
1. 3 cm (1 1/8").

C. Edge treatment:
1. Selected by Owner

D. Seam width:
1. <1/8" unless otherwise specified.

E. Sink mounting:
1. Undermount.
2. Drop in.

F. Backsplash:
1. Applied.

G. Endsplash:
1. Applied.

H. Performance characteristics: Physical properties data sheet:

Property	Typical Result	Test Procedure
Flexural Strength	>5,300 psi	ASTM D 790
Flexural Modulus	5.3–5.7E^{6} psi	ASTM D 790
Flexural Elongation	>0.1%	ASTM D 790
Compression Strength (Dry)	~27,000 psi	ASTM C 170
Compression Strength (Wet)	~24,000 psi	ASTM C 170
Hardness	7	Mohs' Hardness Scale
Thermal Expansion	1.45 x 10^{-5} in./in./°C	ASTM D 696
Gloss (60° Gardner)	45–50	ANSI Z 124
Colorfastness	Passes	ANSI Z 124.6.5.1
Wear and Cleanability	Passes	ANSI Z 124.6.5.3
Stain Resistance	Passes	ANSI Z 124.6
	(stain 5.2, chemical 5.5, cigarette 5.4 resistances)	
Fungal and Bacterial Resistance	No growth	ASTM G 21 & G
22High Temperature	None to slight effect	NEMA LD 3.3.6*
		Resistance (356°F)
Boiling Water Resistance	None to slight effect	NEMA LD 3.3.5*
Freeze-Thaw Cycling	Unaffected	ASTM C 1026
Point Impact	Passes	ANSI Z 124.6.4.2

Ball Impact	164 inches	NEMA LD 3.3.8*
Slip Resistance	Above 0.80 for textured models	ASTM C 1028
Static Coefficient of Friction	0.89/0.61 (wet/dry)	ASTM C 1028 (as received)
Static Coefficient of Friction	0.87/0.65 (wet/dry)	ASTM C 1028 (with renovator)
Abrasion Resistance	139	ASTM C 501
Specific Gravity	2.44	ASTM D 792
Density	~2400 kg/m3	
Water Absorption	0.12%	ASTM C 373
Long- and Short-Term	<0.04%	ASTM D 570
Moisture Expansion	<0.01% on average	ASTM C 370
Toxicity Pittsburgh Protocol	Passes, LC50=68–128	
Flammability	For all colors tested (Class I and Class A)	ASTM E 84, UL 723 and NFPA 255
Flame Spread Index	FSI <10 for 3 cm and <15 for 2 cm	
Smoke Developed Index	SDI <50 for 3 cm and <100 for 2 cm	
Nominal Thickness	2 cm and 3 cm	
Nominal Weight	10 lb./ft.2 (2 cm) 15 lb./ft.2 (3 cm)	

* NEMA results based on the NEMA LD 3-2000

2.3 ACCESSORY PRODUCTS

A. Joint adhesive:

1. Adhesive to create color-matched seam.

B. Sink/bowl mounting hardware:

1. Manufacturer’s approved bowl clips, brass inserts and fasteners for attachment of undermount sinks/bowls.

2.4 FACTORY FABRICATION

A. Shop assembly

1. Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer’s printed instructions and technical bulletins.
2. Form joints between components using manufacturer’s standard joint adhesive joints.
    a. Reinforce as required.
3. Provide factory cutouts for plumbing fittings and bath accessories as indicated on the drawings.
4. Rout and finish component edges with clean, sharp returns.
    a. Rout cutouts, radii and contours to template.

b. Smooth edges.

2.5 FINISHES

A. Select from the manufacturer’s standard color chart.
   1. Color:
      a. Hanstone Steel Patina

PART 3 — EXECUTION

3.1 INSTALLATION

A. Install components plumb and level, in accordance with approved shop drawings and product installation details.
   1. Tops:
      a. Flat and true to within 1/8" (3 mm) of a flat surface over a 10' length.
      b. Allow a minimum of 1/16" to a maximum of 1/8" (3 mm) clearance between surface and each wall.

B. Form field joints using manufacturer’s recommended adhesive, with joint widths no greater than 1/8" (3 mm) in finished work.
   1. Keep components and hands clean when making joints.

C. Sinks:
   1. Adhere undermount sinks/bowls to countertops using manufacturer’s recommended adhesive and mounting hardware.
   2. Adhere drop-in sinks/bowls to countertops using manufacturer-recommended adhesives and color-matched silicone sealant.

D. Provide backsplashes and endsplashes as indicated on the drawings.
   1. Adhere to countertops using manufacturer’s standard color-matched silicone sealant.

E. Keep components and hands clean during installation.
   1. Remove adhesives, sealants and other stains.
   2. Components shall be clean on date of substantial completion.

F. Connections:
   1. Make plumbing connections in accordance with Division 15.
   2. Make electrical connections in accordance with Division 16.

3.2 CLEANING AND PROTECTION

A. Keep components clean during installation.
   1. Remove adhesives, sealants and other stains.

B. Protect surfaces from damage until date of substantial completion.
   1. Replace damaged work.

3.3 SCHEDULE

A. As shown on architectural drawings

END OF SECTION 06652

SECTION 07110 – WATERPROOFING & DAMPPROOFING

PART ONE - GENERAL

DESCRIPTION

Provide and install all water proofing, damp proofing, vapor barriers, and thru-wall flashings where indicated on drawings and specified herein.

Provide and install spray-on waterproofing on exterior brick veneer and exposed grade beams.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements
Grading: Section 02200
Cast-in-Place Concrete: Section 03300
Masonry: Division 4
Painting: Section 09900

PRODUCT DELIVERY, STORAGE, AND HANDLING

Store materials above ground on level platforms in unopened containers. Cover and store in approved manner, which will protect them from weather exposure.

PART TWO - PRODUCTS

VAPOR BARRIER: Densely structured, heavy duty single ply 11 mil thick (0.011) vinyl plastic sheet. Tape all joints & penetrations for a positive seal.

THRU WALL PLASTIC WALL FLASHING: 30 mil polyvinyl chloride sheet with plasticizers and other modifiers. Formed into uniform flexible sheets. Black in color.

ADHESIVES: Type recommended by flashing manufacturer for weather resistant seaming and adhesive application of wall flashing sheet.

INSPECTION

Inspect surfaces to verify suitability.

Verify proper fill and compaction for vapor barriers under slabs on grade. Report unsatisfactory conditions.

PREPARATION

Clean surfaces to be treated of oil, grease, dirt, laitance and loose material. Point and fill holes, joints, and cracks flush, grind down high spots and rough surfaces and leave smooth. Moisture content of surface shall be as recommended by material manufacturer.

INSTALLATION

Install all products in accordance with manufacturer's instructions and recommendations.

VAPOR BARRIERS: Over leveled fill material under floor slabs on grade, place one layer of membrane material, lapping edges at least 6". Lap and seal joints; seal edges to wall, column bases, etc. fold and cement corners, or otherwise make vaporproof. Provide sealed contact with piping and penetrating features.

Seal punctures and cuts before placing concrete.

WALL FLASHING: Where shown on drawings and at all exterior walls where masonry or panels rest on concrete grade beams, floors and steel shelf angles place membrane flashing.

Apply where concealed wall flashing is indicated; at head, sills of exterior masonry openings; at exterior wall damp courses; under sheet metal copings; as otherwise indicated.

Start flashing 1/2 inch from exterior face of wall; vertical leg carried up at least 6 inches; top terminated in first course of back-up masonry.

Openings: at heads, sills of masonry openings; carry head flashing 6 inches beyond ends of steel lintels; at heads, sills turn up ends to form pans, with corners folded, not cut.

Flashing for Horizontal Masonry Surfaces: laid in slurry or fresh mortar, topped with fresh full bed of mortar.

Flashing for Vertical Masonry Surfaces: laid on surfaces, sufficiently spotted with mastic to hold

Joints: lapped at least 4 inches; contact surfaces coated with adhesive.

END OF SECTION 07110

SECTION 07210 – BUILDING INSULATION

PART ONE - GENERAL

DESCRIPTION

Provide thermal and sound control insulation as shown on drawings and specified herein.

Definition: R-value designation is the thermal resistance of insulation only, not including alleged air spaces or other factors assumed to result in higher R-values.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Gypsum Drywall System: Section 09250
Acoustical Treatment: Section 09511
Mechanical Systems insulation: Division 15

SUBMITTALS

Samples: Submit samples of each material or product to be used, clearly identified with manufacturer's name, brand name, R-value, and composition.

Manufacturer's Literature: Manufacturer's recommended installation instructions, including procedures for use of adhesive.

Certificates: Manufacturer's certification that materials meet specification requirements.

PRODUCT DELIVERY, STORAGE & HANDLING

Deliver materials to project site in manufacturer's original unopened packaging.

Identify contents, manufacturer, brand name, thermal values, and applicable standards.

Store materials in area protected from weather, moisture and open flame or sparks.

Remove damaged material from site.

ENVIRONMENTAL REQUIREMENTS

Do not install rigid board insulation when temperature is 40 degrees F or below, during rain or wet weather, or when surfaces are wet.

SCHEDULING

Coordinate installation with other trades whose work may be affected.

PART TWO - PRODUCTS

MATERIALS

BIB SYSTEM: Blown In Batt System. This application is applied by a mesh attached to the studs with hoses inserted into the cavity blowing the fiber glass insulation. Provide a fiber glass blown insulation into a cavity wall forming a seamless blanket of insulation. Minimum "R" value shall be R-22 @ all **exterior and interiors walls**.

OPEN-CELL SPRAY FOAM INSULATION: See Section 07219 – Open-Cell Spray Foam Insulation.

EXTERIOR SHEATHING INSULATION BOARD (Exterior Sheathing): Shall be OSB ZIP-R (R-12) panel system: 7/16" (12.7mm) thick by 4' by 8', 9' or 10' (1.9 lb. per square foot) or an approved equal. Tape all joints with manufacturer taping system prior to installation of metal wall panels.

PART THREE - EXECUTION

INSPECTION

FIBROUS (BLANKET) INSULATION:

Examine areas scheduled to receive insulation to insure protection against inclement weather and other hazards and work of preceding trades is completed.

Examine space allocated for insulation for proper depth to receive material.

Proceed with installation only when conditions are satisfactory.

INSTALLATION

FIBROUS (BLANKET) INSULATION:

Install unfaced 6" batt insulation in all stud partitions and above all acoustical ceiling panels unless indicated on drawing otherwise. (Insulation shall terminate at ceiling height at interior partitions/insulation shall enclose total exterior envelope at exterior stud framing.

Fit insulation snugly between framing.

Maintain integrity of insulation over entire area to be insulated.

Carefully cut and fit insulation around pipes, conduits, and other obstructions. Where pipes or conduit are located in stud places, place insulation between exterior wall and pipe, compressing insulation where necessary.

Do not install insulation requiring compression in excess of 10%.

CLEAN UP

Remove adhesive splatters and smears.

Remove debris from project site.

Leave work areas in clean condition.

END OF SECTION 07210

SECTION 07219 - OPEN-CELL SPRAY FOAM INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Open-cell spray polyurethane foam insulation.

1.2 RELATED WORK

A. The following items are not included in this Section and are specified under the designated Sections:

1. Section 06100 - ROUGH CARPENTRY: Wood framing.
2. Section 07210 - BUILDING INSULATION: Supplemental blanket, batt and roll insulation.
3. Section 07900 - JOINT SEALANTS: Rod and sealant at control and expansion joints.

1.3 PERFORMANCE REQUIREMENTS

A. Conform to applicable code for flame and smoke, concealment, and over coat requirements.

B. JM ocSPF Spray Applied Polyurethane Insulation is approved for use as a nonstructural thermal insulating material in Type I and V construction under IBC and dwellings under IRC when installed in accordance with ICC ES Report ESR-1655. Insulation is for use in wall cavities, floor assemblies, ceiling assemblies or attics and crawl spaces when installed in accordance with Section 4. Insulation may be used in wall assemblies in fire-resistive rated-construction as described in Sections 3.6 and 4.4.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

B. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product.

C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing urethane foam products and systems of this section with minimum ten years documented experience.

B. Installer Qualifications: A current Johns Manville Qualified Applicator specializing in performing Work of this section with minimum three years documented experience.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging, clearly marked with the manufacturer's name, brand name, product identification, type of material, safety information, manufacture date, and lot numbers until ready for installation.

B. Store spray foam materials between 65 degrees F (18 degrees C) and 85 degrees F (29 degrees C) with careful handling to prevent damage to products.

C. Protect all materials from freezing and other damage during transit, handling, storage, and installation.

1.7 PRE-INSTALLATION MEETINGS

A. Convene pre-installation meeting prior to commencing work of this section.

1. Attendance: Architect, Contractor, manufacturer’s representative and spray insulation applicator.
2. Agenda: Review installation sequence and scheduling.

1.8 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Do not apply the polyurethane foam when substrate or ambient air temperatures are below 40 degrees F (4.4 degrees C) or above 120 degrees F (49 degrees C) and relative humidity is greater than 85 percent unless advance means and methods are recommended by the manufacturer.

C. Do not apply polyurethane foam when wind velocity exceeds 15 miles per hour unless advance means and methods are recommended by the manufacturer. Use precautions to prevent damage to adjacent areas from fugitive overspray.

PART 2 - PRODUCTS

2.1 OPEN-CELL SPRAY FOAM INSULATION

A. Basis-of-Design: Johns Manville

B. Approved equals is Certainteed, Arnthane, SkyInsualtion or an approved manufacturer that meets this performance specification.

C. Open Cell Spray Foam Insulation: Two-component, polyurethane cellular foam with a nominal density of 0.5 pcf, as manufactured by Johns Manville. JM ocSPF foam shall have the following minimum physical properties when cured:

1. Apparent Density: 0.5 pcf when tested in accordance with ASTM D 1622.
2. R-Value (aged) when tested in accordance with ASTM C 518: 3.9 at 1 inch, 13 at 3.5 inches, 19 at 5.5 inches.
3. Oxygen Index: 25 when tested in accordance with ASTM D 2863.
4. Compressive Strength: 0.5 psi when tested in accordance with ASTM D 1621.
5. Fungi Resistance: Zero Rating when tested in accordance with ASTM G 21.
6. Air Leakage: Less than 0.02 (L/s)/m2 when tested in accordance with ASTM E 283.
7. Sound Transmission Coefficient: 51 (STC) when tested in accordance with ASTM E 90.
8. Noise Reduction Coefficient: 0.7 (NRC) when tested in accordance with ASTM C 423.
9. Open Cell Content: Greater than 90 percent when tested in accordance with ASTM D 2846.
10. Tensile Strength: Less than 5 psi when tested in accordance with ASTM D 1623.
11. Shear Strength: 1.4 psi when tested in accordance with ASTM C 273.
12. Permeability: 21 perm-inch when tested in accordance with ASTM E 96.
13. Dimensional Stability: Less than 15 percent change in volume when tested in accordance with ASTM D 2126.
14. Surface Burning Characteristics:

a. Flame Spread/Smoke Developed: At maximum 4 inch (102 mm) thickness, flame spread index of less than 25 and a smoke developed index of less than 450 when tested in accordance with ASTM E 84.
b. Corner Test: Thickness up to 12 inches (305 mm) for wall cavities and 16 inches for ceiling cavities meets NFPA 286 when covered with 1/2 inch (13 mm) gypsum board or equivalent thermal barrier.

D. Primer as Applicable to Substrate: A water based epoxy primer to achieve superior adhesion and penetration on concrete, masonry, metal, wood, etc. as supplied by Johns Manville or approved equal.

2.2 ACCESSORIES

A. Intumescent coating for spray foam insulation in attic and crawlspace applications, as manufactured by Johns Manville. Provide per code.

B. Gypsum board assemblies providing a 15 minute fire separation thermal barrier rating are specified in Section 09200.

C. Gypsum board assemblies providing a 1 hour fire resistant rating are specified in Section 09200.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify that all surfaces to receive polyurethane foam insulation are clean, dry and free of dust, dirt, debris, oil, solvents and all materials that may adversely affect the adhesion of the polyurethane foam.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Mask and protect adjacent surfaces from over spray.

C. Prepare surfaces using the methods recommended by the spray foam manufacturer for achieving the best result for the substrate under the project conditions.

D. Wood:

1. Plywood shall contain no more than 18 percent water, as measured in accordance with ASTM D 4449 and ASTM D 4444.
2. Most untreated and unpainted wood surfaces need not be primed. The spray polyurethane foam can be applied directly to the dry wood. Priming may be required under certain conditions as recommended by the manufacturer.

E. Steel:

1. Primed: Clean primed metal surfaces free of loose scale, rust, weathered or chalking paint. Remove grease, oil, or other contaminants with proper cleaning solutions.
2. Previously Painted: Clean painted metal surface using hand or power tools to remove loose scale and dirt. Remove grease, oil, and other surface contaminants using a power wash technique or proper cleaning solutions.
3. Galvanized: Clean galvanized steel as recommended by manufacturer. Steel should be primed with primer at the rate of 1 gallon per 300 square feet.
4. Unpainted Steel: Clean as recommended by manufacturer to prepare the steel surface for the primer. Prime with primer at the rate of 1 gallon per 300 square feet.

F. Concrete and Masonry: Must be cured and loose dirt and any other contaminants, including asphaltic materials removed. If primer is required, prime at the rate of one gallon per 300 square feet.

G. Sheathing Board: Most sheathing boards need not be primed prior to the application of sprayed-in-place polyurethane foam.

3.3 PRIMER APPLICATION

A. Prepare surfaces and apply primer in accordance with manufacturer's instructions.

B. Apply primer to the properly prepared substrates in accordance with the manufacturer’s instructions to achieve a minimum thickness of dry film thickness. Allow primer to cure 24 hours prior to application of spray polyurethane foam or other products.

3.4 INSTALLATION

A. Install in spray foam in accordance with manufacturer's instructions.

B. Spray polyurethane foam components (A) and (B) shall be processed in accordance with instructions found on the manufacturers product datasheet.

C. Schedule application to anticipate climatic conditions prior to application to ensure highest quality foam and to maximize yield. All substrates to be sprayed must be dry at the time of application. Moisture in the form of rain, fog, frost, dew, or high humidity greater than 85 percent R.H is not permitted unless Contractor reviews means and methods of spraying with manufacturer's representative prior to installation. Use screens, masking and other precautions to prevent damage to adjacent areas from fugitive overspray.

D. Where spray foam system is installed within attics or crawl spaces where entry is made only for service of utilities, an ignition barrier must be installed in accordance with IBC Section 2603.4.1.6 and IRC Section R314.5.4, as applicable. The ignition barrier must be installed in a manner so that the foam plastic insulation is not exposed. JM ocSPF, as described in these sections, may be installed in unvented attics in accordance with IRC Section R806.4.

E. Application in attics and crawlspaces with Intumescent Coating:

1. JM ocSPF insulation may be installed in unvented conditioned attics in accordance with IRC Section R806.4.
2. In attics, spray foam insulation may be spray-applied to the underside of roof sheathing and roof rafters.
3. In crawlspaces, spray foam insulation may be spray-applied to the underside of floors as described in this section.
4. Thickness of JM ocSPF open-cell foam applied to the underside of the top space must not exceed 10 inches (254 mm).
5. Thickness of JM ocSPF open-cell foam applied to vertical surfaces must not exceed 12 inches (300 mm).
6. JM ocSPF must be coated uniformly coated with JM intumescent coating at a coverage rate of 0.6 gallons per 100 square feet in accordance with manufacturer's instructions.
7. Surfaces to be coated must be dry, clean, and free of dirt, loose debris, and any other substances that could interfere with the adhesion of the coating.
8. Coating must be applied when ambient and substrate temperatures are above 50 degrees F (10 degrees C) and requires a 24-hour curing time after application.

F. Application in attics and crawlspaces with Minimum 1⁄2 inch (12.7 mm) Gypsum Board.

1. In attics, spray foam insulation may be spray-applied to the underside of roof sheathing and roof rafters.

2. In crawlspaces, spray foam insulation may be spray-applied to the underside of floors as described in this section.
3. Thickness of JM ocSPF open-cell foam applied to horizontal surfaces must not exceed 16 inches (406 mm).
4. When applied to vertical surfaces, the thickness of JM ocSPF open-cell foam must not exceed 12 inches (305 mm).

G. Application on Attic Floors:

1. JM ocSPF must be separated from the area beneath the attic by an approved 15 minute rated coating.
2. JM ocSPF maximum height is 12 (305 mm) inches.
3. JM ocSPF must be coated with 0.6 gallons per square foot of JM intumescent coating.
4. JM ocSPF insulation may be installed to a maximum thickness of 12 inches (254 mm) between joists in attic floors. JM ocSPF insulation must be separated from the area beneath the attic by an approved thermal barrier. The ignition barrier in accordance with IBC Section 2603.4.1.6 and IRC Section R314.5.3 may be omitted when installed in accordance with this Section.

H. One-hour Fire-Resistance Rated Wall Assemblies (Limited Load Bearing):

1. Interior Face: One layer of 5/8-inch-thick (15.9 mm) Type X gypsum wallboard must be applied parallel to the interior face of 2-by-6 wood studs space a maximum of 16 inches (406 mm) on center and fastened with Type S, 1-5/8 inch (41 mm) long screws spaced 8 inches (203 mm) on center. The interior cavity is filled with 3 inches of JM ocSPF spray- applied foam insulation.
2. Exterior or Opposite Face: Another layer of 5/8 inch (15.9 mm) thick Type X gypsum wallboard must be applied in the same manner as the interior face.
3. Axial Load Design: Axial loads applied to the wall assembly must be limited to the least of the following:

    a. 2,756 pounds (122 642 N) per stud.
    b. A maximum of 51 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the ANSI/AF&PA NDS.

I. Exothermic Caution:

1. Polyurethane foam shall be sprayed in minimum 1/2 inch (12.7 mm) thick passes or lifts. Overall thickness applied in one pass shall be limited to a maximum of 6 inches for JM ocSPF open cell foam to avoid fire hazards resulting from excessive heat generation. When applying SPF on chlorinated

polyvinyl chloride the pass thickness for JM ocSPF must be limited to 6 inches. If additional thickness is required it must applied within 15 minutes.

2. If a second pass is needed, wait 10 to 15 minutes between passes to allow reaction heat to dissipate. If more passes are needed, wait 30 minutes between passes to allow reaction heat to dissipate.
3. The exothermic reaction can cause temporary substrate thermal rises in excess of 150 degrees F, which may result in substrate thermal expansion. If the substrate then contracts when the reaction heat dissipates, substrate deformation can occur.
4. The full thickness of spray polyurethane foam to be applied within any given area should be completed in one day.

J. Vapor Retarder Application:

1. When required, a vapor retarder shall be applied to the substrate to be insulated or to the finished spray polyurethane foam insulation. The predominant direction of the vapor drive determines the location of the vapor retarder relative to the spray polyurethane foam.
2. Apply thermal barriers and vapor retarder (if required) according to ICC recommendations.

3.5 ACCESSORY APPLICATION

A. Joint Filler Foam and Caulk: Use joint filler foam and/or caulk to seal around windows, doors, chimneys, electrical raceways, sill plates, multiple studs, etc. Expansion of joint filler foam in a confined space can tighten window frames and door jambs. Use care in these areas to avoid distortion of these members.

3.6 FIELD QUALITY CONTROL

A. Protect installed products until completion of project.

B. Field inspection and testing will be performed under provisions of Section 01 40 00. Inspection will include verification of insulation and overcoat thickness and density.

3.7 PROTECTION

A. Protect installed products until completion of project.

B. After completing work, clean glass and spattered surfaces.

C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 07219

SECTION 07424 – COMPOSITE WALL PANELS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Composite wall panel dry joint, pressure-equalized rainscreen system.
   2. Accessories including sub girts, aluminum panel splines, aluminum panel bases, head flashings, clips, shims, fasteners, and aluminum trim prefinished to match aluminum wall panels.

B. Related Sections:
   1. Section 05500 - Metal Framing
   2. Section 06100 - Rough Carpentry
   3. Section 09250 - Gypsum Drywall
   4. Section 07600 – Flashing & Sheet Metal
   5. Section 07900 - Joint Sealers

1.2 REFERENCES

A. Reference Standards: Current edition at date of Bid.

B. American Architectural Manufacturers Association (AAMA):
   1. AAMA 501.1 - Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure.
   2. AAMA 508-07 - Voluntary Test Method and Specifications for Pressure Equalized Rain Screen Wall Cladding Systems.

C. ASTM International:
   1. ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.
   2. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
   3. ASTM D 294 - Method of Tumbler Test for Coke.
   4. ASTM D 659 - Method of Evaluating Degree of Chalking of Exterior Paints.
   5. ASTM D 882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
   6. ASTM D 968 - Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.
   7. ASTM D 2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
   8. ASTM D 2247 - Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
   9. ASTM D 3352 - Standard Test Method for Strontium Ion in Brackish Water, Seawater, and Brines.

10. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
11. ASTM E 283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
12. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
13. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Conform to provisions of Section 01 31 13 for coordination with work of other Sections.
   1. Section 07 25 00 for application of weather resistive barrier over exterior sheathing substrate specified.
   2. Section 06 16 43 following installation of sub girt system as required to seal and make a continuous air barrier.

B. Preconstruction Meetings: Conform to provisions of Section 01 31 19.
   1. Attendance: Contractor, Applicator, Owner, Architect, and those specifically requested to attend.
      a. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
      b. Review methods and procedures related to aluminum composite panel installation, including manufacturer's written instructions.
      c. Examine support conditions for compliance with requirements, including alignment between and attachment to the structural members.
      d. Review flashings, special details, wall penetrations, openings, and condition of other construction that will affect aluminum wall panels.
      e. Review temporary protection requirements for aluminum composite wall panel assembly during and after installation.
      f. Review wall panel observation and repair procedures after aluminum wall panel installation.
   2. Meeting Time: Minimum 3 weeks prior to commencement of work covered by this Section and any related work affecting work covered by

this Section.

3. Meeting Location: Project Site.

1.4 DESIGN REQUIREMENTS

A. Components: Designed and manufactured to withstand dead and live loads caused by positive and negative wind pressure acting normally to plane of composite wall panels.
B. Wall Panel Deflection: L/180.
C. Perimeter Framing Deflection: L/180.
D. Thermal Movement: Design system to accommodate vertical and horizontal thermal movement of components without causing distortion, excessive stress on fasteners, or oil canning when subjected to recurring temperature variations.
E. Drainage: Design for positive drainage of water leakage and condensation to exterior of wall panel system.
F. Tolerance of Substructure: Design system to accommodate up to 1/4 inch in 10 feet variation out of plane.
G. Seismic Design: Conform to International Building Code for the Seismic Category appropriate for location of system installation.

1.5 PERFORMANCE REQUIREMENTS

A. Provide the following testing documentation: Testing documentation must be current and meet or exceed specified design and performance requirements, and must be documented and certified by an independent testing agency acceptable to Architect and applicable building code jurisdiction.
B. Preload at +12.5 pounds per square foot.
C. Air Infiltration in accordance with ASTM E 283 (at 1.57 pounds per square foot): 0.117 cubic feet per minute per square foot.
D. Water Penetration in accordance with ASTM E 331 (at 6.24 pounds per square foot): Approximately 0.3 square feet.
E. Water Penetration in accordance with AAMA 501.1 (at 6.24 pounds per square foot): Approximately 0.8 square feet.
F. Static Pressure Air Infiltration (at 6.24 pounds per square foot): Less than 0.01 cubic feet per minute per square foot.
G. Static Pressure Water Resistance (at 15 pounds per square foot): No uncontrolled leakage.
H. Uniform Load Deflection:
    1. At +25.0 pounds per square foot design load: No damage.
    2. At -25.0 pounds per square foot design load: No damage.
    3. Repeat Static Pressure Air Infiltration:
    4. At 6.24 pounds per square foot: Less than 0.01 cubic feet per minute per square foot.

5. At 15.00 pounds per square foot: No uncontrolled leakage.
6. Dynamic Pressure Water Resistance (at 15 pounds per square foot): No uncontrolled leakage.

I. Pressure Equalized Rainscreen:
   1. Interstory Horizontal Displacement (drift):
      a. At 3/4-inch left/right: No visible damage.
   2. Interstory Horizontal Displacement (maximum):
      a. At 3.0 inches left/right: No visible damage.
   3. Repeat Static Pressure Air Infiltration:
      a. At 6.24 pounds per square foot: Less than 0.01 cubic feet per minute per square foot.
      b. At 15.00 pounds per square foot: No uncontrolled leakage.
   4. Uniform Structural Overloads:
      a. At +37.5 pounds per square foot (Overloads): No damage.
      b. At -37.5 pounds per square foot (Overloads): No visible damage.

1.6 SUBMITTALS

A. Submit under provisions of Section 01 33 00.

B. LEED Credits: Conform to Section 01 81 13 for documentation of LEED Credits contributing to Certification of Project under USGBC LEED 2009 (Version 3.0) Green Building Rating System for Sustainable Building Requirements.

C. Buy American Act Certification: Submit documentation certifying that products comply with provisions of the Buy American Act 41 U.S.C. 10a-10d.

D. Product Test Reports: Indicate compliance of products with requirements from qualified, independent testing agency.

E. Shop Drawings:
   1. Provide detail drawings prepared by manufacturer or manufacturer's authorized agent showing openings and penetrations.
   2. Include details of each condition of installation and attachment.
   3. Provide details at a minimum scale of 1-1/2 inch per foot of all required trim needed for complete installation.
   4. Provide shop drawings reflecting deviations from manufacturer's standard details and details differing from Contract Documents.
   5. Include components, metal panel profile(s), dimensions, joinery dimensions, configurations, and reason for deviation.

F. Product Data:
   1. Manufacturer's technical data, installation instructions, standard detail drawings specific and manufacture qualification letter including past projects

G. Product Samples: 2-inch x 3 inch showing specified finish for each specified wall.
H. Manufacturer's Instructions: Indicate installation requirements, rough-in dimensions, special procedures, and conditions requiring special attention.
I. Sample Warranty: Meet or exceed provisions specified by this Section.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications:
   1. Minimum of 10 years' experience in fabricating and supplying metal wall panel systems.
   2. Responsible for technical design support as required for system conforming to panel manufacturer's warranty provisions.
   3. Provide review and approval of shop drawings differing from panel manufacturer's standard details prior to installation and conduct interim inspections during construction.

B. Installer Qualifications:
   1. Able to document a minimum 7 years' experience installing commercial metal wall panel systems.
   2. Employ job-site foreman, with minimum of 3 years' experience supervising installation of metal wall panel work of this Section, dedicated to Work of this Contract.
   3. Foreman: Continuously on site for duration of work of this Section for this Project.

C. Single Source Responsibility:
   1. Perform metal panel and related flashing and sheet metal work by or under supervision of single installer.

1.8 WARRANTY

A. Provide Warranties under provisions of Section 01 78 36.
B. Manufacturer Coating Performance Warranty: 20-year warranty against fading, color change, chalking, peeling, cracking, or delaminating of the coating system. Can vary by finish selection.
C. Contractor: 5-year labor warranty for panel installation, including, flashings, sealants, fasteners, and accessories to remain functioning.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, sheets, aluminum wall panels, and other manufactured items to prevent damage or deformity.
B. Package aluminum wall panels for protection during transportation and handling.
C. Unload, store, and erect aluminum wall panels in a manner to prevent bending, warping, twisting, and surface damage.
D. Store aluminum wall panels vertically, covered with suitable weather tight and ventilated covering.

E. Store aluminum wall panels to ensure dryness, with positive slope for drainage of water.
F. Do not store aluminum wall panels in contact with other materials that may cause staining, denting, or other surface damage.
G. Do not allow storage space to exceed 120 degrees Fahrenheit.

PART 2 PRODUCTS

2.1 SYSTEMS

A. Composite Wall Panels: Install concealed clips and/or fasteners over substrate system.

2.2 MANUFACTURERS

A. Subject to compliance with requirements, provide products manufactured by
   1. Norwood and Norwood Mini by MAC Metal Architectural ACM:
   2. Panel Skin Material: Select one, subject to compliance with requirements: See elevations for quantities and styes.
   3. Panel Material Thickness: see sections.
   4. Panels rated as either Class A (FR) or B (PE) as required by code or project specific specification when tested in accordance with ASTM E84 (Steiner Tunnel Test).
   5. Submit alternate tested systems by other manufacturers/fabricators to architect not less than 30 days prior to bid.

2.3 COMPOSITE PANEL MATERIALS

A. Composition:
   1. Aluminum composite material comprised of a thermoplastic core sandwiched between two aluminum sheets formed in a continuous process with no applied glues or adhesives.
B. Tolerances:
   1. Panel bow not to exceed L/175 of panel overall dimension in width or length.
   2. Panel dimensions allow for field adjustment and thermal movement.
   3. Panel lines will be sharp, smooth, and free from warps or buckles.
C. Condition: Panel surfaces will be free of scratches and marks caused during fabrication.
D. Uniformity:
   1. If metallic color is used, panel grain must be maintained.
E. Vapor Management: Fabricate panels for control of condensation and ventilation of the rainscreen cavity.
F. Expansion/Contraction: Engineer panels to permit required expansion and contraction using concealed anchors.

G. Strippable Protective Film: Factory applied for protection of weather face finish and removed upon completion of the panel installation. Failure to remove the film may lead to over-exposure and damage to the panel.

2.4 FASTENERS

A. Supply Fasteners and clips tested to meet provisions of this section, as approved by fastener manufacturer and engineer of record.

B. Exposed Fasteners:
   1. Stainless steel blind unless recommended by the panel manufacturer.
   2. Construction Fasteners, Inc., ZAC, self-drilling, self-tapping, non-corrosive fasteners with heads finished to match panel finishes and flashings, gasketed with EPDM washers, and as instructed by manufacturer.

C. Concealed Sheet Metal Fasteners: Panhead, self-drilling, self-tapping, non-corrosive fasteners, and as instructed by manufacturer and engineer of record.

D. Fastener Lengths: Penetrate into cold formed metal framing and subgirts, and other metal framing systems per fastener manufacturer's recommendations.

2.5 SYSTEM COMPONENTS

A. Subgirts:
   1. Provide G90 galvanized steel of gauge and spacing required for metal wall panel system structural requirements and as recommended by the panel manufacturer and engineer of record in accordance with approved shop drawings.
   2. To avoid galvanic reaction, separate dissimilar materials.

2.6 FLASHINGS

A. Metal Flashing, Fascias, and Trim:
   1. 0.032-inch minimum thickness.
   2. Material, color, and finish to match wall panels.
   3. Conform to provisions of Section 07 60 00.

B. Panel and Flashing Closures: Waterproof, semi-rigid, polyethylene closed cell foam, or solid rubber in size and shape to snugly fit panel configuration.

C. Cutting and Fitting:
   1. Make all cuts neat, square, and true.
   2. Saw-cut or rout panels, de-burr edges, and clean filings from adjacent surfaces.

2.7 SEALANTS

A. Conform to Section 07 92 00 and manufacturers' instructions.

2.8 FINISH

A. Panel Finishes:

1. Utilize coating with a fluoropolymer coating with 70% Kynar® 500 resins.
2. Select colors from manufacturer's standard colors.
3. Pencil Hardness - ASTM D3352-74: Use an Eagle Turquoise HB-H pencil as a minimum.

B. Impact Adhesion - ASTM D294-84: No cracking or loss of adhesion in coating.
C. Cure Test - NCCA 11-18: Withstand 50+ double rubs of MEK.
D. Humidity Resistance ASTM D2247-85: No blisters after 3,000 hours of 100% humidity at 95 degrees Fahrenheit.
E. Salt Spray Resistance - ASTM B117-85: After 3,000 hours of exposure to 5 percent salt fog at 95 degrees Fahrenheit, show few #8 blisters and less than 1/8" average creepage from scribe.
F. Weatherometer Test - ASTM D882-86/G23-88: No cracking, peeling, blistering, or loss of adhesion after 2,000 hours in coating.
G. Chalking Resistance - ASTM D659-86: No chalking greater that #8 after 10 years of Florida exposure at 45 degrees S.
H. Color Change - ASTM D2244-74: Color change not to exceed 5 NBS units after 10 years of Florida exposure at 45 degrees S for 5,000 hours.
I. Abrasion Resistance - ASTM D968-81: Resist 65+/-15 liters/mil minimum of falling sand on coating.
J. Color: Select from the full range of manufacturers' standard colors.
K. Anodized Finish (if specified):
    1. Class 1, Clear Anodic Finish: AA-M12C22A41 (mechanical finish: nonspecular as fabricated; chemical finish: etched, medium matte; anodic coating: Architectural Class 1, clear coating 0.018 mm or thicker) complying with AAMA 607.1.
    2. Class 1, Clear Anodic Finish: AA-M12C22A44 (mechanical finish: nonspecular as fabricated; chemical finish: etched, medium matte; anodic coating: Architectural Class 1 integrally colored or electrolytically deposited color coating 0.018 mm or thicker complying with AAMA 606.1 or AAMA 608.1.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify installation conditions satisfactory to receive work of this Section before beginning.
B. Verify substrate installation complete, flat, and true to plane.

3.2 PREPARATION

A. Field Measurements: Verify prior to fabrication of metal panels and flashings.
B. Electrolytic Protection: Treat contacting surfaces of dissimilar metal of

different galvanic range with non-absorptive tape, gaskets, or as instructed by manufacturer.

C. Protect surrounding areas and surfaces to preclude damage during work of this Section.

D. Lay out work before beginning installation as necessary for true, plumb, and aligned panel installations. Verify locations of joints and panel lengths.

3.3 INSTALLATION

A. Conform to manufacturer's instructions and provisions of Contract Documents.

B. Install to allow thermal movement of metal panels.

3.4 SUBGIRTS AND FASTENERS

A. Space, locate, align, and fasten subgirt hat channel framing over gypsum sheathing after application of air barrier specified by Section 07 25 00.

B. Install fasteners in lengths and locations required in order to penetrate hat channels and structural metal wall framing in accordance with fastener manufacturers' instructions.

C. Torque screws as necessary for a snug fit. Do not over-torque; prevent 'oil canning' of panels.

3.5 METAL WALL PANELS

A. Lock panels in place to engage interlocking seams.

B. Do not stretch or compress interlocks.

C. Secure panels in place with panels aligned and without warp or deflection.

D. Make cutting and fitting neat, square, and true. Where required saw cut, de-burr edges, and clean filings from adjacent surfaces. No torch cutting permitted.

3.6 PANEL GIRTS AND FASTENERS

A. Space, locate, and align for even distribution of exposed fasteners, as instructed by manufacturer and engineer of record.

B. Install fasteners in lengths and locations required to penetrate per fastener manufacturers' instructions.

C. Torque screws as necessary for snug fit. Do not over-torque; prevent damage to panels.

3.7 FLASHINGS

A. Install flashings as part of manufactured system as necessary to seal and close ends and to restrict water penetration behind wall panels.

B. Thermal Movement: Install flashing systems to allow unrestricted thermal movement of metal panels over attachment clips.

C. Penetrations: Make cutouts and edge clearances of sufficient size and shape to allow unrestrained thermal movement and to prevent contact of metal panels with penetrations.

D. Metal Flashing: Make overlaps minimum 4 inches and in conformance to Section 07 60 00.

E. Cutting and Fitting: Make neat, square, and true. Saw-cut panels or rout, de-burr edges, and clean filings from adjacent surfaces.

3.8 ADJUSTING

A. Correct identified defects and irregularities.

3.9 CLEANING

B. Leave installation clean and free from residue and debris from work of this Section.

3.10 PROTECTION

A. Take measures to protect metal panel installations from construction activities for duration of Project. Do not permit activities that may result in gouging, scratching, or denting metal panels and flashing.

END OF SECTION 07424

SECTION 07600 - FLASHING & SHEETMETAL

PART ONE - GENERAL

DESCRIPTION

Provide flashing and sheet metal as shown on Drawings and specified herein, including reglets, counter flashing, expansion joints and all miscellaneous clips.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:

OUALITY ASSURANCE

Sheet Metal and Flashing Details: Shall be as recommended by manufacturer of Roofing System. The Sheet Metal and Air Conditioning Contractors National Association, Inc., publication ARCHITECTURAL SHEET METAL MANUAL, (SMACNA), latest edition, shall be followed where not in conflict with manufacturer's recommendations.

Responsibility: The Contractor shall subcontract the sheet metal and related items specified in this Section, and in the Single Ply Roofing Section of this specification to a single subcontractor specializing in this type of work so there will be undivided responsibility for the specific performance of all component parts.

SUBMITTALS

Shop Drawings: Furnish shop drawings for all manufactured items. Drawings to show metal thicknesses, finishes, installation details and fastening methods. Furnish standard color charts in duplicate for Architect's selection.

Samples: Furnish full size samples of shop-made metal items if required by Architect.

Manufacturer's Literature: Furnish duplicate copies of manufacturer's literature covering all manufactured items.

Warranty: Roof sheet metal flashing installation except at metal roofing, is subject to warranty as specified to maintain existing warranty.

MATERIALS

Metals: Metal flashing, wall flashing, and expansion joints as indicated on Drawings. Provide all exposed joint covers, end laps, drive pine, sealants and related items as required for a complete system.

Provide @ junctions - 6” cover plates and gravel guards, 90 degree corner covers, and shape ridge covers on fascia.

Sealant shall be type as recommended by manufacturer of reglet and complete assembly shall be installed in accordance with manufacturer’s recommendations

Nails & Screws: Fasteners as shown on the drawings, as specified herein, but in no case less than size and type as recommended by manufacturer.

Flashing at Roof Penetrations: Flashings at all roof penetrations, including those required for mechanical and electrical work, shall be provided under this Section. This does not include penetrations at those roof-mounted items which contain integral, pre-fabricated curbs with integral counter-flashing. Provide lead flashing at all roof drains.

Single pipe and conduit roof penetrations up to six (6) inch o.d. shall be flashed and sealed using a Pate Pipe Seal of required size and installed in accordance with manufacturer’s recommendations and the included detail.

At multiple pipe and conduit roof penetrations, where the single seal cannot be used, install the Pate Pipe Curb Assembly, size and type as required including all components for a complete installation.

Membrane Flashing: Provide membrane flashing where shown on drawings and at all exterior walls where masonry rests on concrete grade beams, floors and steel shelf angles; and at steel spandrel beams.

Membrane flashing shall be composed of 3 oz. copper sheet bonded between two sheets of textured, woven, high tensile strength glass fabric with a specially blended asphalt compound.

PART THREE - EXECUTION

INSPECTION

Carefully examine all surfaces and substrates prepared for sheet metal by other trades. Notify the Contractor of any defects such as surfaces that are not true, square, level or plumb, or dry as the case may be, or surfaces not having correct pitch or that are otherwise unsuitable to receive this work. Do not perform this work until the faulty conditions have been corrected.

INSTALLATION

Provide all necessary metal flashing and counter flashing for a complete watertight job. All metal counter flashings shall be set prior to laying wall and shall be placed when walls are laid.

Proper allowance shall be made for expansion and contraction in all metal work.

The exposed edges of all breakmetal work shall be turned under 1/2" (hemmed) in such a manner as to conceal them from view and to permit interlocking or separate continuous angle or channel at bottom for aligning. Welding, brazing, or soldering of joints will not be permitted without approval of Architect.

All breakmetal type fascias and copings shall have a separate continuous angle to channel which shall interlock with bottom edge of fascia or coping at bottom for alignment purposes.

Exposed nailing will not be permitted. Ends of all flashing in block & brick walls shall be turned up and sealed to form a dam. Factory fabricated fascias and reglets shall have manufacturer's standard joint covers, spacing as shown or called for on drawings.

Install all items in accordance with manufacturer's recommendations and approved shop drawings.

All flashing shall be installed straight, level, true to line. No dents, crimps or unlevel conditions shall be acceptable. All unsatisfactory installation shall be removed and re-installed at Contractor's expense. All expansion caps shall be installed symmetrical with span. No exception acceptable.

CLEANUP

All sheet metal surfaces shall be cleaned of all resin, dirt, grease and other foreign substances immediately after this work is finished.

Remove all trash and debris from the site.

END OF SECTION 07600

SECTION 07900 – JOINT SEALERS

PART ONE - GENERAL

DESCRIPTION

Provide and apply calking and sealing as shown on drawings and as specified herein. In general, seal all openings as shown on drawings, and at all other locations which normally require calking to seal against infiltration from air, water and insects, including, but not being limited to, the following:

Construction and expansion joints, joints between dissimilar materials; joints around windows, door frames, louvers, and other penetrations and openings in the exterior wall; paving joints; interior walls as detailed or specified.

Joint sealers @ penetrations through rated construction shall be sealed with a material capable of preventing the passage of flames and hot gases when tested in accordance with ASTM-E814.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Steel Doors & Frames: Section 08110

OUALITY ASSURANCE

All sealing shall be done by qualified applicators.

SUBMITTALS

Furnish manufacturer’s literature for sealants, callings and mastics specified in this Section.

Submit color samples in duplicate of all sealing and calking compounds for approval.

JOB CONDITIONS

Do not proceed with sealant installation during inclement weather unless all requirements and manufacturer’s instructions can be complied with. Do not proceed with installation of elastomeric sealants under extreme temperature conditions which would cause joint openings to be at either maximum or minimum width, or when extreme temperatures or heavy wind loads are forecast during period required for initial or nominal cure of elastomeric sealants.

Contractor shall furnish a 5 year warranty in writing to replace any or all joints failing within warranty period at no cost to Owner, including replacement of other material damaged as result of sealant failure.

PART TWO - PRODUCTS

MATERIALS

Interior Calking (to be painted): One part acrylic latex, ASTM C-834-76.

Exterior Elastomeric Sealant (Building): Polysulfide rubber base, exterior non-acid type, one-part, non-sag, complying with Fed. Spec. TT-S-00230C, Type II, Class A. Acceptable products include “790 Building Sealant” by Dow Coming; “Silpruf’ by General Electric Corp.,”GC-9 Synthacalk” by Pecora Corp. Colors shall be selected by Architect to match adjacent finish.

Exterior Elastomeric Sealant (Paving): Cold applied, two part, job mixed, self leveling urethane compound conforming to Fed Spec. TT-S-00227E Type I, Class A, service temperature range -40 degrees to 180 degrees F. Acceptable products include “Sonolastic Paving Joint Sealer” by Sonnebom Contech; “NR-200” by Pecora Corp; Woodmont
“Chem-Calk 55Øtt

Joint Primer/Sealer: Quick drying type recommended by sealant manufacturer.

Sealant Backer: Open sell, flexible, polyurethane backer rod, of size required for joint and approved for use by the sealant manufacturer.

Preformed Elastic Joint Seals: Acmaseals, open-celled compression type, of vulcanized elastomeric compound, manufactured by Ace Highway Products Corporation. Lubricant/adhesive shall be the appropriate Acma product. Type NN1 by Williams Products, Inc. approved equal.

Fire Caulk: FireTemp Caulk (CI Intumescent) one-component, ready to use sealant manufactured by Johns Manville & USG Fire Stop Systems or and approved equal. Provide manufacturers recommendation for achieving the required rating according to system design listing. Install per manufacturers recommendation. FireTemp Spray (SI Intumescent) modified latex that can be spray, rolled or brushed. Manufactured by Johns Manville & USG Fire Stop Systems or and approved equal. Provide manufacturers recommendation for achieving the required rating according to system design listing. Install per manufacturers recommendation

PART THREE - EXECUTION

INSPECTION

Examine surfaces to receive sealants and calking to insure that conditions will permit satisfactory installation. Do not proceed with installation until unsatisfactory conditions are corrected.

Clean, neutralize and prime all surfaces in accordance with manufacturer’s recommendations. Mask edges to protect adjoining surfaces and produce a straight finish line.

INSTALLATION

In general, install all joints with depth equal to one-half joint width. In deeper joints a non-absorbent closed cell expandable polyethylene foam shall be used to bring depth to limit prescribed.

A diameter shall be selected that will cause compression when in place. Joints less than 1/4” will not require foam backing. Use foam or paper tape on working joints as bond breakers for back of joints.

All work shall be done according to manufacturer’s printed specifications and instructions. Apply sealants in continuous beads, with open joints, voids or air pockets.

Confine sealants to joint areas with masking tapes or other precautions. Apply compounds in concealed compression joints accurately so that excess compound will not extrude from joint.

Remove excess compound or sealant promptly as work progresses, and clean adjoining surfaces. In rough surfaces or joints of uneven widths, install sealant well back into joint.

Use anti-tack agent where necessary to protect freshly-applied sealant from public traffic and dirt. Joints shall be slightly recessed. All joints throughout construction shall be hand tooled and finished. Set all exterior door thresholds in sealant.

Preformed Elastic Joint Seals: Install in strict accordance with manufacturer’s recommendations.

Paving Sealant Application: Expansion and contraction joints and other cracks in concrete paving and walks that develop prior to final acceptance of project shall be sealed with Exterior Paving Sealant. Maximum depth of sealer in joint shall be two inches. Provide backer rods or expansion joint filler material where required. Joint shall be clean of dirt and water. Ambient and sealer temperatures shall be as recommended by manufacturer of sealer. Remove surplus and spilled sealer material before it becomes solidified.

Protect surfaces from damage. Clean soiled surfaces immediately. Replace with new material and any damaged material which cannot be cleaned.

END OF SECTION 07900

SECTI0N 08110 – STEEL DOORS & FRAMES

PART ONE – GENERAL

DESCRIPTION

Provide hollow metal doors and frames as shown on drawings and specified herein.

Provide accessories as required except those specified under Finish Hardware.

Coordinate with hardware supplier for fitting to template. (Verify continuous hinge)

Doors called for continuous hinges shall have door frame prepped for installation of the continuous hinge.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions
Finish Hardware: Section 08710
Painting: Section 09900

QUALITY ASSURANCE

Comply with applicable requirements of Steel Door Institute S.D.I 100, and Commercial Standard CS242, latest edition, except as revised by specific requirements of the Section.

All labeled fire doors and frames shall be of a type which has been investigated and tested in accordance with UL-10(b), ASTM E-152, NFPA 252, ANSI A2.2 and, when required UL-305.

A physical label shall be affixed to all Underwriters' Laboratories classified fire doors, listed fire door frames or Factory Mutual approved fire doors and frames as evidence of compliance with procedures of the labeling agencies

SUBMITTALS

Submit shop drawings showing thickness of metal, details of construction, profile of molding, connections to other work, fastenings, anchors and reinforcing for hardware. Profiles shall follow architectural drawings.

PACKAGING

Package all doors in full cartons. Bank cartons securely to doors.

DELIVERY, STORAGE & HANDLING

Deliver, receive and handle at the job site in a manner to prevent damage. Store upright in a protected area on runners or skids and cover with vented tarpaulins or vented plastic.

PART TWO – PRODUCTS

MATERIALS

1. Steel-Interior Doors and Frames: Commercial quality cold rolled, ASTM A366.
2. Steel-Exterior Doors and Frames: Electrolytic zinc coated steel, ASTM 591 Class “A”.
3. Shop applied paint: Baked-on rust inhibiting paint primer conforming to ASTM B-117.
4. Supports & Anchors: Minimum 16 gauge sheet metal, manufacturer’s standard support.
5. UL Rated Frames: As required by code or indicated on Drawings

ACCEPTABLE MANUFACTURES

1. Amweld
2. Steelcraft
3. Mesker
4. Republic
5. Curries
6. Metal Products, Inc.

DOORS

Provide all exterior doors to be Amweld or approved equal (16 gauge galvanized fully welded seamless. Prior approval are acceptable, if they meet the specifications. Must be submitted prior to bidding. Provide steel stiffeners plus polystyrene core.

Provide all interior to be Amweld or approved equal (18 gauge seamless) fully welded seamless. Prior approval are acceptable, if they meet the specifications. Must be submitted prior to bidding. Provide steel stiffeners plus polystyrene core

End Closures: 18 gauge minimum.

Door Faces: 16 gauge exterior; 18 gauge interior.

Labeled doors shall carry Underwriter’s Label. UL labels to be applied.

HOLLOW METAL FRAMES

Combination buck, jambs and trim, with miters clean cut, reinforced, fully seal welded and clean off flush. Knockdown types will not be accepted.

Frames: for exterior doors 14 gauge galvanized; interior 16 gauge cold rolled steel.
All UL frames to have applied UL labels on each frame.
Profile per drawings.

Hinge reinforcing plates (14 ga.) shall be factory attached to accommodate specified hinge sizes. Plate adjustable strike plates and door silencers shall be furnished by Manufacturer.

Supply complete components for cased openings, windows and sidelights, stops and other miscellaneous items to provide for a complete installation as sized and scheduled on Drawings.

FABRICATION - GENERAL

Fitting for hardware shall be done at the factory. Mortising, reinforcing drilling and tapping to be done as required by the approved hardware schedule and with templates furnished by Finish Hardware manufacturer. Reinforcement and preparations for hardware shall be done in accordance with ANSI A115 and ANSI 156. Reinforcement to be concealed and minimum 7 gauge.

Reinforce doors and frames which are to receive surface applied hardware. Drilling and tapping to be done in field.

Surfaces shall be smooth, free from warp, wave, buckle and other defects. Corners shall be square.

Welded joints shall be dressed clean and smooth and finished flush with base metal surface. Joints to be imperceptible when finished.

All material shall be shop prime painted.

DOOR & FRAME FABRICATION

Provide cutouts for mortised hardware, accurately located and made to fit hardware. Provide plaster guards in back of hardware cutouts. Offset reinforcement so surface of hardware shall finish flush with surface of door.

Provide glass lite openings. Full glass doors and fixed slat louvers where shown. Under cut doors where indicated on mechanical drawings.

Punch frames for door mutes, 3 on strike side for single doors and 2 at head for pairs.

For all frames, provide one 12 gauge floor slip on bottom of each jamb and angle spreaders at bottom of each frame.

Provide 3 anchors per jamb of type required by wall construction and as indicated on shop drawings. Strikes shall be set out and adjusted to provide clearance for silencers.

SHOP PAINTING

1. Clean metal thoroughly to remove rust, scale, oil, grease or other foreign materials.
2. Fill exposed surfaces with mineral paste filler to eliminate scars and blemishes. Sand to smooth, even surface.
3. Bonderize by chemical treatments to assure maximum paint adherence.
4. Prime paint with dip or spray coat of rust inhibitive paint to all surfaces.

PART THREE - EXECUTION

INSTALLATION

Erect door frames plumb, square, and in proper position to receive partition work. Set frames with heads level.

Rigidly brace frames in place and anchor securely to floor. After building in full height of both jambs, remove bracing and floor spreaders. Use care in anchorages so that jambs will be without twist.

Cope or miter trim and glazing stops with a hairline fit. Avoid tightening screws and fasteners excessively to prevent dimpling of the metal.

Installation of labeled fire doors, including all operating characteristics, labeled frames, and UL listed builders hardware, shall be in accordance with NFPA Publication Nos. 80 and 191 and with the codes of local authorities having jurisdiction.

ADJUST & TOUCH-UP

With Architect’s approval, minor damage to metal, incurred during erection, may be repaired by filling with lead or lead alloy, ground smooth and flush, if strength and finish appearance are not impaired.

Remove and replace work showing defects or blemishes without additional expense to Owner.

Touch up places showing abrasion of finish with same paint as applied at factor.

END OF SECTION 08110

SECTION 08211 PLASTIC CLAD WOOD DOORS

PART ONE – GENERAL

RELATED DOCUMENTS

General & Supplementary Conditions
Finish Hardware: Section 08710
Glass & Glazing: Section 08800
Painting: Section 09900

SUMMARY

Extent and location of each type of flush wood door is indicated on drawings and in schedules.

Types of doors required include the following:

5-Ply Particleboard core flush wood doors with plastic laminate faces and wood veneer and on all edges (4).

Factory finishing of flush wood doors is included in this section.

Louvers for flush wood doors, including furnishing and installation, are specified tinder this section.

Metal door frames for flush, wood doors are specified in. another Division - 8 section..

SUBMITTALS

Product Data: Door manufacturer's technical data for each type of door, including details of core and edge construction., trim for openings and. louvers, and factory-finishing specifications.

Shop Drawings: Submit shop drawings indicating location and size of each. door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for factory finishing and. other pertinent data.

For factory pre-machined doors, indicate dimensions and locations of cutouts for locksets and other cutouts adjacent to light and louver openings.

Samples: Submit samples, 1'-0" square or as indicated, for the following:

Plastic Laminate Faced Doors: Each color, finish and pattern required.

Factory Finished Doors: Each type of factory finish required.

Metal Frames for Light Openings: Metal light frames in 6" lengths; for each material, type and finish required.

QUALITY ASSURANCE

Quality Standards: Comply with the following standards:

NWWDA Quality Standard: I.S.1 "Industry Standard for Wood Flush Doors", of National Wood Window and. Door Association. (NWWDA).

AWI Quality Standard: "Architectural Woodwork Quality Standards", including Section 1300 "Architectural Flush Doors", of Architectural Woodwork Institute (AWI) for grade of door, core construction, finish and other requirements exceeding those of NWWDA quality standard.

NWWDA Quality Marking: Mark each wood door with NWWDA Wood Flush Door Certification Hallmark certifying compliance with applicable requirements of NWWDA I.S.1 Series.

For manufacturers not participating in NWWDA Hallmark Program, a certification of compliance may be substituted for marking of individual doors.

Fire-Rated Wood Doors: Provide wood doors, which are identical in materials and construction to units tested in door and frame assemblies per ASTM E 152 and which are Labeled and Listed for ratings indicated by UL, Warnock Hersey or other testing and inspection agency acceptable to authorities having jurisdiction.

Oversize Fire—Rated Wood Doors: For door assemblies exceeding sizes of tested assemblies, provide manufacturer's certificate stating that doors conform to all standard construction requirements of tested and labeled fire door assemblies except as to size.

Manufacturer: Obtain doors from a single manufacturer.

PRODUCT DELIVERY, STORAGE, AND HANDLING

Protect doors during transit, storage and handling, to prevent damage, soiling and deterioration. Comply with requirements of referenced standards and recommendations of NWWDA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors", as well as with manufacturer's instructions.

Identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames, and hardware, using temporary, removable or concealed markings.

PROJECT CONDITIONS

Conditioning: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with the following requirements applicable to project’ s geographical location:

Referenced AWI quality standard including Section 100-S-3 “Moisture Content”.

WARRANTY

General: Warranties shall be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.

Door Manufacturer’s Warranty: Submit written agreement on door manufacturer’s standard form signed by Manufacturer, Installer and. Contractor, agreeing to repair or replace defective doors that have warped (bow, cup or twist) or that show telegraphing’ of core construction in face veneers, or do not conform to tolerance limitations of referenced quality standards.

Warranty shall also include reinstallation, which may be required due to repair or replacement of defective doors where defect was not apparent prior to hanging.

Warranty shall be in effect during following period of time after date of Substantial Completion.

5 Ply Particleboard & Mineral Core Interior Doors with Plastic Laminate Faces and Edges: **Full – life of original installation.** Provide styled door where indicated and install glass lites in door where shown on drawings.

Contractor’s Responsibilities: Replace or refinish doors where Contractor’s work contributed to rejection or to voiding of manufacturer’ s warranty.

PART TWO - PRODUCTS

MANUFACTURER

Available Manufacturers: Subject to compliance with requirements, manufacturers offering doors, which may be incorporated in the work include, but are not limited to, the following:

WEYERHAUSER DOORS
BEULL DOORS
MARSHFIELD DOORS
OSHKOSH DOORS

INTERIOR FLUSH WOOD DOORS

1 ¾" thickness - 5 Ply Particleboard Core Doors with Plastic Laminate: Comply with the following requirements:

Laminate Faces: High pressure decorative laminates complying with NEMA LD-3 and as follows:

Colors, Patterns, and Finishes: Selected by Architect from laminate manufacturers' standard products and colors.

Faces: GP-50 (0.050" nominal thickness) with matching stiles. Type 1 (waterproof)

AWI Grade: Premium.

Construction: Hot pressed

Fire Rated Mineral Core Doors: Comply with the following requirements:

Faces ands AWI Grade: Provide faces and grade to match non-rated doors in same area of building, unless otherwise indicated.

Construction: Manufacturer's standard mineral core construction as required providing fire-resistance rating indicated.

Edge Construction: Provide manufacturer's standard laminated edge construction for improved screw-holding capability and split resistance as compared to edges composed of a single layer of treated lumber.

Pairs: Furnish formed steel edges and astragals for pairs of fire-rated doors, unless otherwise indicated.

Provide fire-rated pairs with fire-retardant stiles which are labeled and listed," for kinds of app1ications indicated without formed steel edges and astragals.

LEAD LINE PLASTIC LAMINATE DOOR

Provide 1 ¾" thickness w/ 1/8" lead line each side of door. Wood grain style by Marshfield or an approved equal.

LOUVERS AND LIGHT FRAMES:

Wood Louvers: Size, type and profile shown and fabricated from the following:

Wood: Flat-Slat, factory finished louver.

Wood Frames for Light Openings in Fire/Regular: Manufacturer' s standard frame and approved for use in door of fire-rating indicated. (Style selected from manufacturer's full range of mouldings.)

FABRICATION

Fabricate f1ush wood doors to produce doors complying with following requirements:

In sizes indicated for job-site fitting.

Metal Astragals: Pre-machine astragals and formed steel edges for hardware where required for pairs of fire-rated doors.

Light Openings: Trim openings with moldings of material and. profile indicated.

Louvers: Factory install louvers in prepared openings.

PART THREE - EXECUTION

EXAMINATION

Examine, installed door frames prior to hanging door

Verify that frames comply with indicated, requirements for type, size, location, and swing characteristics and have been installed with plumb jamb and level heads.

Reject doors with defects.

Do not proceed with installation until unsatisfactory conditions have been corrected.

INSTALLATION

For installation see Division-8 “Finish Hardware” section of these specifications.

Manufacturer’s Instructions: Install wood doors to comply with manufacturer’s instructions and of referenced AWI standard as indicated.

Install fire-rated, doors in corresponding fire-rated frames in accordance with requirements of NFPA No. 80.

Job-Fit Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.

Fitting Clearances for Non-Rated Doors: Provide 1/8” at jambs and heads; 1/16” per leaf at meeting stiles for pairs of doors; and 1/8” from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4” clearance from bottom of door to top of threshold.

Fitting Clearances for Fire-Rated Doors: Comply with NPPA 80.

Bevel non-rated doors 1/8” in 2” at lock and hinge edges.

Bevel fire-rated doors 1/8” in 2” in lock edge; trim stiles and rails only to extent permitted by labeling agency.

Pre-fit Doors: Fit to frames for uniform clearance at each edge.

Factory-Finished Doors: Restore finish before installation, if fitting or machining is required at the job site.

ADJUSTING AND PROTECTION

Operation: Re-hang or replace doors, which do not swing or operate freely.

Finished Doors: Refinish or replace doors damaged during installation.

Protect doors as recommended by door manufacturer to ensure that wood doors will, be without damage or deterioration at time of acceptance.

END OF SECTION 08211

SECTION 08500 – ALUMINUM ENTRANCES AND WINDOWS

PART ONE - GENERAL

DESCRIPTION

Furnish and install all aluminum windows, window sub-frames, steel reinforcement channels, break metal mullions, and all miscellaneous aluminum framing indicated on drawings and specified herein.

Also included is hardware for entry doors, thresholds, weather-stripping, and sealing of all storefront required in this section.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions
Sealants & Caulking: Section 07900
Finish Hardware: Section 08710
Glass & Glazing: Section 08800

QUALITY ASSURANCE

Test reports certified by an independent testing laboratory must be made available upon request.

SUBMITTALS

SHOP DRAWINGS: Furnish shop drawings showing dimensions, details of construction, finish joint system, anchorage, and glazing details.

SAMPLES: Provide aluminum finish samples in duplicate. Samples shall represent full range of permissible color tolerance.

MANUFACTURER’S DATA: Cut sheets showing hardware and accessories and schedule of hardware.

PART TWO - PRODUCTS

ALUMINUM STOREFRONT SYSTEM:

Shall be 2” x 6” extrusions of 6063-15 alloy and temper. Thermal barrier (exterior only) shall consist of a two-part, chemically curing, high density polyurethane. Fasteners shall be aluminum in accordance with ASTM A164. Glazing gaskets shall be elastomeric extrusions systems and shall be (Series 6000 thermal Multiplane) by Oldcastle Building Envelope.

Doors shall be medium stile complete with hinges, panic devices, concealed closures, thresholds and all required items for complete installation.

Doors shall be of mortised and reinforced corner construction, assembled with 3/8" diameter steel tension rods for maximum strength.

ADA Pull handle to be mounted in the stile panel and shall have concealed mechanical fastener mounting. The cylinder shall be fully recessed in the stile panel to prevent tempering and catching on clothing. Locking of the door shall be Paneline concealed rod exit touch-bar panic device.

All vertical and horizontal door sections shall be installed so as to receive infill thickness as indicated in the glass and glazing sections of the aluminum vertical snap-in glass stops, with a lock-in elastomeric system, shall be provided to accommodate specified in fill thickness.

HARDWARE: Doors shall have Paneline concealed rod exit panic devices, operating hardware shall be butt hinges or offset pivots as supplied by door manufacturer.

FRAME: Color Selected by Architect.

FINISH: Color Selected by Architect.

GLAZING: Shall be 1" insulated. Low E Color selected by Architect. Verify with architectural drawings.

FRONT ENTRANCE SLIDER DOORS

Shall be Stanley Access Technologies Dura Glide 3000 series or an approved equal. Shall be breakout and electric sliding doors.

PART THREE - EXECUTION

INSPECTION

Examine openings and surfaces to receive this work and determine that dimensions, elevations, and slopes of connecting work will insure a satisfactory installation.

Do not proceed with installation until all discrepancies are corrected.

PREPARATION

Dissimilar Materials: Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials. Separate by use of gaskets or coat of bituminous paint.

INSTALLATION

Install framing members, doors, and field applied hardware in accordance with manufacturer's approved shop drawings and recommendations in prepared openings.

Provide and install all clips, brackets, hardware closure trim, and metal shapes to provide for complete installation.

Set members plumb, level, square, at proper elevations and in alignment with other work without warp or rack of frames or panels.

Accurately cut and fit materials, assemble with snug hairline joints, and anchor securely in place. All cut and machined ends and recesses shall be true and accurate and free of burrs or rough edges.

Set sill members and other members in a bed of sealant compound or with joint fillers or gaskets to provide weather-tight construction.

Sealant: By installer of aluminum entrances and storefronts. Sealant lines to be straight, neat, and thin (1/4" max. width). Finished joints to be recessed.

Clean aluminum surfaces promptly after installation.

Install hardware required for entrance doors. Verify proper operation of all moving parts. Adjust as required. Protect hardware until acceptance of building. Set each edge of thresholds in strip of sealant compound.

Install steel reinforcement in mullions of 8" wall system to resist wind load & eliminate deflection.

END OF SECTION 08500

SECTION 08710 - FINISH HARDWARE

PART ONE – GENERAL

DESCRIPTION

Furnish and deliver to job finish hardware for all doors as scheduled and specified herein including, but not limited to, thresholds and weather stripping for exterior hinged doors: strikes, screws and accessories necessary for complete installation.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions
Rough Hardware: Section 06100
Installation: Section 06200

QUALITY ASSURANCE

Manufacturer: Catalog numbers specified herein have been used for the purpose of establishing a basis for quality, finish, design and operational function. In order to establish such a basis for quality, certain processes, types of equipment and of material are specified by manufacturers brand or catalog number. Items of equal quality, by other manufacturers, approved in writing by Architect, acceptable.

Hardware supplier to maintain an office and warehouse within 100 miles of the jobsite in order to properly service the job.

Supplier to have a full time Architectural Hardware Consultant (A.H.C.) employed to adequately service job. This individual will be required to make a minimum of (2) visits to jobsite. One visit will be required at or near completion of job to check & verify installation of hardware and correct or make any necessary adjustments. This visit should include a meeting with the University to explain functions of any special items furnished. Deliver at this time (2) copies of final finish Hardware Schedule for future use of the University. A letter from this supplier verifying compliance with the above will be required to complete this contract.

SUBMITTALS

Hardware Schedule: Submit hardware schedule showing quantities, types, catalog numbers, keying system and location of various items. Compile in a manner to serve as installation guide.

Samples: To be submitted, if requested by Architect, for purpose of verifying designs, finishes and operating characteristics

Templates: Furnish, as required to manufacturer of doors and frames.

Manuals & Tools: Furnish Owner, with manufacturer's instructions for installing, operating and maintaining finish hardware upon completion of work. Deliver to Owner all installing, adjusting and maintaining tools normally supplied with hardware by manufacturers for proper operation and maintenance.

STANDARDS

A. Conform to latest requirements and recommendations of applicable portions of standards listed.
B. UL label doors and smoke doors in accordance with the applicable requirements of NBFU Pamphlet No. 80 and NFPA Standard No. 80.
C. American Society of Architectural Hardware Consultants - ASHAHC.
D. United States of American Standards Institute - A.S.I.

UNDERWRITER'S LABORATORIES REQUIREMENTS

All items of hardware provided for fire doors shall be UL approved for usage with types and sizes of fire doors and frames specified. All fire door installations shall, when completed, meet the requirements of the appropriate insurance inspection and rating bureaus, and shall not be subject to any rate penalty for the Owner.

PRODUCT DELIVERY STORAGE & HANDLING

Deliver hardware to project in manufacturer's original, unopened, labeled packages or containers. All items of hardware shall be properly marked or tagged according to building number, hardware item number, door number and location prior to arrival on job site so as to conveniently identify the hardware and its intended location in the building. Under no circumstances shall hardware be shipped directly from factory to project.

Store hardware items in manner to avoid damage to materials and in approximate order of use to avoid excessive re-handling.

Damage of any items of hardware in shipment, or any item that may be defective, and not in compliance with specifications, shall be replaced promptly.
All locks to have interchangeable core cylinders set to GMK & Master key as directed.

END OF SECTION 08710

SECTION 08800 - GLASS AND GLAZING

PART ONE - GENERAL

DESCRIPTION

Provide all items of glass as shown on drawings and specified herein.

RELATED WORK SPECIFIED ELSEWHERE

Steel Doors and Frames: Section 08100
Plastic Clad Wood Doors: Section 08211
Aluminum Entrances, Fixed Windows & Storefronts: Section 08500

OUALITY ASSURANCE

Regulatory Agencies:

Manufacturer of glass and glazing materials and fabrication and installation of glazing materials, shall meet the requirements of the Safety Standard for Architectural Glazing Materials (16 CFR Part 1201) dated January 6, 1977, effective July 6, 1977, issued by the Consumer Product Safety Commission.

Recommendations of the “Glazing Manual” of the Flat Glass Marketing Association are by reference made a part of this specification.

Provide safety glass, at no cost to the Owner, and whether shown on drawings or not, at all areas required by Local, State, or National Codes and Standards.

Product Identification: Labels showing manufacturer’s identity, type, thickness, and quality required on each piece of glass. Labels to remain on glass until it has been set and inspected, except safety glazing panels. Safety glass (wire, tempered, laminated) shall be permanently labeled in accordance with the referenced act.

Acceptable Manufacturers: Except as otherwise scheduled below, all glass shall be as manufactured by PPG Industries, LOF Industries, American-St. Gobain, or Globe Amerada.

SUBMITTALS

Shop Drawings: Sections and details of glass installation at framing members such as head, mullions, transoms, jambs, and sills.

Certificates: If required by Architect, manufacturer’s certification that all materials meet specification requirements.

PRODUCT DELIVERY, STORAGE, AND HANDLING

Receive, store, and handle glass items in manner to prevent damage and insure satisfactory installation.

JOB CONDITIONS

Coordinate installation scheduling with Contractor. Perform work when ambient temperature is above 40 degrees F.

Perform glazing on dry surfaces only.

PART TWO - PRODUCTS

MATERIALS

General: All glass or polycarbonate shall be thickness as shown on drawings. Any areas not indicated shall be minimum 1/4” thick laminated safety tinted glass. Verify with Architect prior to ordering material.

All tempered glass shall be horizontally tempered showing no tong marks.

Glass Types: See drawings and or required by code.

Doors and Interior Windows: 1/4” thick fully tempered grey tinted float glass unless indicated on drawings otherwise or as indicated on drawings.

Doors and Interior Windows: 1/4” thick clear polished wired glass unless indicated on drawing otherwise.

Glazing Gaskets: Molded or extruded neoprene gaskets of the profile and hardness required for watertight construction; comply with ASTM D-2000, color to match adjacent aluminum surfaces.

Setting Blocks and Spacers: Neoprene, as recommended by manufacturer of glass, chemically compatible with sealant used.
Other Accessories: glazing points, wire spring clips, filler rod, primer-sealer and cleaners, shall all be as recommended by glass manufacturer.

Ferrous metal accessories which will be exposed in the finished work shall have a finish that will not corrode or stain while in service.
Other materials which will be exposed to view and unpainted shall be gray or neutral color.

Verify with other sections as to type of glazing compound required.

PART THREE - EXECUTION

Check that glazing channels are free of burrs, irregularities and debris.

Check that glass is free of edge damage or face imperfections.

Do not proceed with installation until conditions are satisfactory.

Verify dimensions shown on drawings with field measurements. Compute actual glass size, allowing for edge clearances.

Remove lacquer from metal surfaces wherever elastomeric sealants are used. Clean glass and glazing surfaces to remove dust, oil and contaminates, wipe dry. Do not set glass in steel or wood frames until frames have been primed and paint is dry. Surfaces to receive glazing compound shall be primed in accordance with recommendations of manufacturer of glazing compound.

INSTALLATION

Items to be glazed may be shop or field glazed, using glass of the quality and thickness indicated. Preparation of surrounds and glazing, unless otherwise specified, shall be in conformance with the details and general conditions governing glazing in the FGJA Glazing Manual.

Accurately size glass, set without springing and install securely to prevent rattling or breakage.

Gasket Glazing: Glass in aluminum framing and entrance doors shall be set in glazing gaskets and aluminum beads in compliance with framing and entrance door manufacturer’s shop drawings and instructions and as specified herein. Cut gaskets to length of channel with mitered corners. Place glass on setting blocks and center horizontally.

ADJUST AND CLEAN

Inspect prior to final cleaning. Remove and replace broken, scratched, or otherwise damaged glass at no expense to Owner.

PROTECTION OF COMPLETED WORK

Attach crossed streamers away from glass face.

Do not apply markers to glass surface.

Replace damaged glass.

END OF SECTION 08800

SECTION 09250 – GYPSUM DRYWALL

PART ONE - GENERAL

DESCRIPTION

Furnish and install all gypsum drywall systems complete with partition framing, bracing, and related accessories as shown on drawings and specified herein including all wall and ceiling anchors for items furnished under other sections.

Also included are control joints, expansion joint assemblies and metal molding metal “2” clips.

Corner beads shall be furnished and installed under Painting: Section 09900.

Install wall batt insulation as specified in another section.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions
Insulation: Section 07210
Acoustical Ceilings (Suspended): Section 09510
Taping, Floating & Painting: Section 09900

QUALITY ASSURANCE

Material and manufacturer’s specification referenced are based on United States Gypsum
Company. Equivalent systems and materials as manufactured by Flintkote, Georgia-Pacific or National Gypsum are acceptable. Latest edition of manufacturer’s specifications shall apply.

Gypsum drywall used in fire rated assemblies shall bear Underwriter’s Laboratories label.

SUBMITTALS

Samples: Submit samples of all trim and accessory items to Architect for approval.

Certificates: Furnish certificates that fire rated, water repellant, and sound control wallboard comply with respective codes and standards.

PRODUCT DELIVERY, STORAGE & HANDLING

Deliver materials to job site in original, unopened containers or bundles, with labels intact. Handle with care to prevent damage.

Store materials inside, under cover. Stack flat, off floor.

JOB CONDITIONS

Maintain uniform building temperatures within 55 degrees - 70 degrees F. range for 24 hours before, during and after gypsum drywall application and joint treatment.

Provide adequate ventilation.

Protect adjacent surfaces against damage and stains.

PART TWO - PRODUCTS

MATERIALS

METAL STUDS: Shall be fabricated of electro-galvanized steel, sizes as shown on drawings or as called for herein, complete with galvanized floor and ceiling runners of proper size and type furnished by the stud manufacturer. All studs up to 4" size shall be 25 gauge; 4" studs shall be 20 gauge. 6" studs shall be 18 gauge, 8" structural studs shall be 14 gauge @ stone veneer.

STRUCTURAL STUDS: load bearing shall be 14 gauge galvanized steel, unless otherwise indicated on drawings, complete with galvanized runners. Steel shall meet requirements of ASTM A-570-66T, except shall be 50,000 psi.

FURRING MEMBERS: Shall be 25 gauge electro-galvanized steel.

HANGER & TIE WIRES: Shall be 8 gauge galvanized wire for hangers; 16 gauge galvanized annealed wire for ties.

RUNNER CHANNELS: 1 1/2", cold rolled, weighing .475 lbs. per foot.

GYPSUM BOARD: Shall be 5/8" thickness, conform to ASTM C-36-67 SW edge, tapered edge 48" width length as long as possible to reduce joints below ceiling. Provide 5/8" Fire Code Type X, 5/8" WR, and 5/8 WRX as indicated on drawings and schedules.

WR CEMENT BOARD: Shall be water resistant green board in all wet areas, i.e., showers, toilets, restrooms, mech. and jan./laundry. 7/16" Hardi board or Durock. 5/8" shall be used behind stone veneer.

FASTENERS: Type "S" screws to drywall metal framing.

ACCESSORIES & CONTROL JOINTS: Metal trim, "J" mould and expansion joints as recommended by manufacturer. Provide expansion joints spaced according to manufacturers recommendation and as indicated on drawing and details. Provide expansion joints above all windows and doors or as indicated on architectural plans.

INSPECTION

Do not proceed with installation until deficiencies are corrected.

INSTALLATION

Install metal framing systems in accordance with manufacturers printed or written instructions and recommendations, unless otherwise indicated.

Steel framing shall be fireproofed - Provide and install metal "2" clips at steel for bracing & partition tracks:

METAL STUDS: All stud configuration, locations and attachments as indicated on drawings.
Accurately align runners at bottom and top, and securely anchor with suitable fasteners not over 24" o.c.

Studs shall be spaced 16" o.c.

All interior partitions shall be gauged by the metal stud size. (See drawings)

All exterior wall studs shall be 16 ga. structural metal studs.

Provide horizontal channel continuous on studs just above ceiling line. Install channel bracing 6'-0" o.c. maximum, from horizontal channel to the structure above at a 45 degree angle each way. Provide same type 45 degree bracing at both sides of all openings.

Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls.

FURRING MEMBERS: Shall be spaced 24" o.c. and attached vertically or horizontally to masonry, concrete or steel surfaces with hammer-set or power-activated stud fasteners, concrete stud nails, or self tapping screws spaced 24" o.c. through alternate wing flanges of furring channels.

WALL OPENINGS: Frame wall opening larger than 2'-0" square (including all doors) with double structural studs at each jamb and head of frame. Provide 45 degree bracing at both sides of all openings.

Provide all chases, holes, etc. needed for Mechanical Contractor and Electrical Contractor. All work shall be included in this section.

Install batt insulation specified in Section 07200 in cavity of all metal studs that is indicated in specifications or drawings.

Provide double 16 ga. studs each side all openings.

Provide bracing to structure above at each corner of every door frame. Brace back at 45 degree angle each side of partition.

When fire-rated assemblies are required, use only materials and methods of construction conforming to requirements of indicated design. Extend wall & finish to deck above. Provide continuous runner below ceiling line and brace back at 45 degree angle to structure above at 6'-0" on center max.

Provide continuous "J" mould at each side of partition where it connects to ceiling system.

Control Joints: Install control joints (USG #093 only-no vinyl joints will be accepted) where shown on drawings. If none is indicated on the drawings, install joints at 16'-0" o.c. maximum in both walls and soffits. Verify exact locations with Architect.

Install control joints above each side of frame where gypsum board occurs above doors.

Install control joints above & below each side of frame where gypsum board occurs above doors.

Expansion Joint Assemblies: Install expansion joint assemblies where shown on drawings. Coordinate location with floor and ceiling joints installed by other trades to insure proper alignment. Install joints plumb.

Quality of workmanship throughout shall be the best. Make all angles and corners clean, true, plumb and square; walls plumb, flat and straight; ceiling flat & level.

Supports for Plumbing Fixtures: For the support of all wall hung plumbing fixtures, provide 14 gauge steel plates, bent on each end and secured at each end to the studs with bolts. Depth of plates shall be as required to accommodate the fixture hanger plates or other support devices which are generally furnished with the fixture.

CLEANING & PROTECTION

Remove drywall rubbish from floor, leaving entire work in first-class condition.

Protect exposed finished surfaces from stains due to droppings and dirt normal to this operation.

SCHEDULE

See drawings for types and locations of partitions and ceiling assemblies and systems.

END OF SECTION 09250

SECTION 09300 – TILE

PART ONE - GENERAL

DESCRIPTION

Provide tile to complete the work as shown on the Drawings and specified herein including, but not limited to:

Setting and leveling beds.

Surface bullnose, marble threshold, wainscot cap, coved and bead pieces as required.

Silicone joints at perimeter of all floor areas.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:

SUBMITTALS

Furnish Master Grade Certificate signed by both tile manufacturer and tile subcontractor.

Submit manufacturers samples for Architect’s selection. Obtain approval of job sample submittals before delivering any products to job site.

Submit tile manufacturer’s maintenance guides for Owner’s use in maintaining all ceramic tile work herein specified.

PRODUCT DELIVERY, STORAGE & HANDLING

Deliver all products to job site in manufacturer’s unopened containers with grade seals unbroken and labels intact.

Keep tile cartons dry.

Maintain temperature at 50 degrees F. minimum during tilework and for 7 days after completion. Vent temporary heaters to outside to avoid carbon dioxide damage to new tile work.

PART TWO - PRODUCTS

MATERIALS

Provide 24” x 48”, 12” x 24”, 13.7 x 14.5 (Wave Mosaic), 3x 12 and 3” x 12” bull nose Tycoon style manufactured by MileStone as indicated on finish schedule / elevations. Colors shall be selected by owner / architect.

MARBLE THRESHOLD: Furnish and install handicap marble threshold where ceramic tile joins different type floor covering. Marble shall be thickness and length required, white marble with blue-gray cloud markings. Width for required handicap slope at change in floor elevation.

EXPANSION JOINT MATERIAL: Provide expansion joint material in the floor finish over saw-cuts in the slab. Match color with mortar.

SETTING MATERIALS:

Portland Cement: ASTM C-l50, Type 1, gray color.

Hydrated Lime: ASTM C-206 or C-207, Type S.

Sand: ASTM C-144

Water: Clean and drinkable.

Dry-Set Mortars: ANSI A118.l.

EXPOXY GROUT/SEALANT:

EPOXY type, 40 colors as selected by Architect. (SPECTRALOCK PRO Premium Grout or an approved equal)

- Stainproof
- Non-sag formula for walls and floors
- Uniform color—no blotchiness or shading
- Easy to maintain, cleanable to the original color
- Performance requirements of ANSI A118.3
- 80 minutes working time at 70°F (21°C)

- Inhibits the growth of stain-causing mold and mildew in the grout joints with Microban® antimicrobial product protection
- Tough, durable, and crack resistant

PART THREE - EXECUTION

INSPECTION OF SURFACES

Before tiling, examine surfaces to receive ceramic tile, setting beds, waterproof membrane, or accessories. Report defects or conditions adversely affecting satisfactory installation to Architect for correction. Verify that deviation in surfaces to receive tile are within allowable tolerances. Level as required to meet requirements. Commencement of work indicates acceptance of surfaces.

LAYOUT (See floor & wall patterns)

Floor and wall joints to line.

Lay out all tile work to minimize cuts less than one-half tile in size.

Locate cuts in both walls and floors to be least conspicuous.

Align wall joints to give straight, uniform grout lines

Align wall joints to give straight, uniform grout lines parallel to wall. Floor and wall joints to line.

Make joints between tile sheets same width as within sheets.

Do not lay tile continuous over expansion or construction joints in concrete slab. Break and provide proper expansion tile control.

Install tile in strict conformance with applicable requirements ot latest edition of ANSI Standard A108--l and Al 08.5 and TCA Handbook.

Fit tiles close around plumbing pipes, fixtures and fittings so that plates or collars will overlap the cut edges.

Do all leveling as required with back-up material. Slope floors to drains and other areas as required. Prepare existing surfaces as required to receive tile materials.

Provide layout on floors and walls as indicated on drawings.

CLEANING

Clean tile surface as thoroughly as possible on completion of grouting.

Remove all grout haze, observing both tile and grout manufacturers recommendations as to use of acid and chemical cleaners.

Rinse tile work thoroughly with clean water before and after chemical cleaners.

Polish surface of tile work with soft cloth.

Protect finish metal surfaces with vaseline where acid cleaning solutions are used.

PROTECTION

Apply to all clean, completed tile walls and floors a protective coat of neutral cleaner solution, part cleaner to 1 part water.

In addition, cover all tile floors with heavy-duty, non-staining construction paper, masked in place.

Prohibit all foot and wheel traffic from using newly tile floors for at least 3 days, preferably 7 days.

Just before final acceptance of tile work, remove paper and rinse protective coat of neutral clear from all tile surfaces.

END OF SECTION 09300

SECTION 09510 – ACOUSTICAL PANEL CEILINGS

PART ONE - GENERAL

DESCRIPTION

Provide acoustical ceilings complete with exposed grid suspension system, lay-in panels and related accessories as shown on drawings and specified herein. Coordinate and provide necessary components as required on Reflected Ceiling Plans in Electrical Section of Drawings.

Install insulation above all new ceiling system as specified in another section.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Building Insulation: Section 07210
Gypsum Drywall Systems: Section 09250
Heating, Ventilating and Air Conditioning: Division 15
Electrical: Division 16
Reflected Ceiling Plan: Refer to Architectural & Electrical Drawings.

OUALITY ASSURANCE

Qualifications of Installer: Installation shall be by an authorized installer approved by acoustical material manufacturer using only skilled mechanics specializing in this type of work.
Responsibility: All acoustical work, including that specified in other sections, shall be subcontracted to a single firm responsible for all acoustical ceiling work, even though some parts may be sub-subcontracted to others.

Tolerances: Finish acoustical ceiling system shall be level to within 1/8” ± (1/4” maximum) in 12 feet.

Suspension system components, hangers and fastening devices supporting light fixtures, ceiling grilles and acoustical units: Maximum deflection 1/360 of span.

Fire Hazard Classification (Acoustical Materials: Federal Specification SS-S-1 1 8A, Class *25.*

Fire Endurance Ratings: Fire rated ceiling assemblies shall conform to Underwriters’ Laboratories, Inc., requirements for the appropriate Time-Design-Rated Assembly.

Openings shall comply with NFPA Pamphlet 90A requirements.

Should the methods of installation indicated on the drawings or described herein be at variance with the requirements of U.L. and NFPA, they shall be revised to meet requirements.

SUBMITTALS

Samples: Submit two full size samples of each type of acoustical material.

Submit one full size sample of each suspension system member, molding and hangers.

Manufacturer's Literature: Submit for review of Architect the manufacturer's recommendation for installation of suspension system.

Certificates: Furnish certification of materials and systems conforming to specification requirements.

Furnish certification of fire endurance rating and flame spread index of fire rating organization.

Maintenance Material: Furnish extra materials equal to 1% of each type of acoustical material supplied, for replacement/maintenance purposes.

Furnish suspension system components in amount sufficient to install extra ceiling units.

PRODUCT DELIVERY, STORAGE & HANDLING

Deliver materials in original, unopened, protective packaging, with manufacturer's labels
indicating brand name, pattern, size, thickness and fire rating as applicable, legible and intact.

Store materials in original protective packaging to prevent soiling, physical damage or wetting.

Do not begin installation until sufficient materials to complete a room are received.

JOB CONDITIONS

Temperature and humidity conditions shall approximate occupied building conditions prior to, during and after installation.

SUSPENSION SYSTEM

General: Suspension system shall be an exposed "T" bar grid and shall comply with ASTM C635, "Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings". System shall be classified intermediate-duty. Provide system components from single manufacturer. Approved manufacturers of Armstrong, Donn Corp. and Chicago Metallic Corporation.

Main, Cross & /Concealed Members: Double web, cold rolled aluminum, minimum thickness 0.02 in., with a standard factory painted satin white finish. Exposed flange 15/16" width.

Edge Molding: Cold rolled, 0.02 in. thick, aluminum, angle, factory painted satin white finish, 15/16 in. wide exposed leg.

Hanger Wire: Minimum 12-gage, galvanized, soft annealed, steel wire.

Furring Channels: ASTM C645.

PRODUCTS

ALUMINUM GRID: White AL Prelude Plus XL 15/16" (Model HD8201WA) Exposed Tee system manufactured by Armstrong or equal by Chicago Metallic Corporation.

ACOUSTICAL CEILING SHAPES: Furnish 8' x 8', Armstrong – (Designflex for Formations – Shapes – Pattern FCSH 5 or an approved equal. Install at lobby as indicated on lighting schedule. Colors will be the Guidance for Behavioral Health Colors. Provide all items to make a complete unit for hanging and trims.

Examine areas scheduled to receive suspended, exposed grid ceilings. Verify that conditions are satisfactory to install ceiling in compliance with contract requirements, particularly adequate clearances at ductwork, piping and conduit to maintain scheduled ceiling heights. For a complete system.

Verify acceptable limits of temperature and humidity conditions.

Do not proceed until all unsatisfactory conditions have been corrected.

PREPARATION

Lay out ceiling pattern based on the contract drawings and the approved ceiling pattern layout.

Unless otherwise indicated, lay-out ceilings working both ways from e principal axes of each area to provide symmetrical patterns.

Coordinate the suspension systems with all electrical and mechanical penetrations, such as light fixtures, access panels and grilles.

INSTALLATION

General: Install acoustical ceilings and suspension system in strict compliance with manufacturer's recommendations, ASTM C636, approved shop drawings, and as specified herein.

SUSPENSION SYSTEM:

Space hangers 2 ft. o.c., each direction.

Install additional hangers at ends of each suspension member. Install additional hangers at each corner of 2'0" x 2'0" openings for light fixtures and additional hangers as required for additional weight of other items. Install hangers 6" from vertical surfaces.

Where duct work, equipment or similar items prevent direct hanging from structure, provide steel channel bridging suspended below such items for hanging necessary wires to runners.

Do not splay wires more than 5 in. to a 4 ft. vertical drop.

Wrap wire a minimum of three times horizontally, turning ends upwards.

Space main runners 4'0" o.c. maximum with hanger wires 4'0" o.c. max. Level and square to adjacent walls.

Space cross runners as required for size of acoustical units.

Install system to permit border units of the greatest possible size. Minimum width of border shall be one-half unit.

Provide system to permit border units of the greatest possible size. Minimum width of border shall be one-half unit.

Provide edge molding at intersection of suspended ceiling and vertical surfaces. Miter corners where edge molding intersect.

Install aluminum grid at all areas scheduled to receive moisture resistant ceiling system.

ACOUSTICAL UNITS:

Install acoustical units to bear on suspension members at all sides.

Install spring spacers at wall molding to hold acoustical unit snug on flange of wall molding.

Seal joints in acoustical units around pipes, ducts and electrical outlets with caulking compound.

Install 6" batt insulation above all ceiling unless noted otherwise.
Install protective board at light fixtures for required 1-hr. rating.

ADJUSTING & CLEANING

Adjust suspension system to assure level ceiling.

Clean adjoining painted surfaces of soil marks resulting from this installation.

Clean soiled or discolored surfaces of tile units following installation.

Touch up scratches, abrasions, voids and other defects in painted surfaces.

Remove and replace damaged or improperly installed units.

END OF SECTION 09510

SECTION 09660 – LUXURY VINYL TILE FLOORING

PART ONE - GENERAL

DESCRIPTION

Provide and install luxury vinyl tile flooring as indicated on Drawings and specified herein.

Install reducer strips and accessories at intersection of different floor materials.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:

QUALITY ASSURANCE

Wherever possible, provide required luxury vinyl tile flooring and accessories produced by a single manufacturer.

SUBMITTALS

Submit samples of each type, color and pattern of flooring, base including accessories required, indicating full range of color and variation.

Submit 2 copies of manufacturers recommended maintenance practices for each type of resilient flooring and accessory required.

PRODUCT DELIVERY, STORAGE & HANDLING

Deliver and store in manufacturer's original, unopened containers and undamaged with legible and intact labels indicating brand names, colors and patterns and quality designations. Do not open containers or remove markings until materials are inspected and accepted by Architect.

Store in work spaces in accordance with manufacturer's directions and recommendations and for no less than 48 hours before installation.

Insure minimum of 70 degrees F. and maximum of 90 degrees F., 48 hours before installation and minimum of *55* degrees F. thereafter.

Instal1 luxury vinyl flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until they have been cured and are sufficiently dry to achieve bond with adhesive as determined by manufacturer's recommended bond and moisture test.

PART TWO - PRODUCTS

MATERIALS

Luxury Vinyl Composition Tile: Prestige Luxury Vinyl Tile (Durham Plank) 20 mil – 7" x 48", Architect shall select colors from full range of manufacturer's standard colors. See architectural drawing finish schedule.

Adhesives: Direct Glue Down LVT – MS160 Spray Adhesive, M98.0 Resilient Flooring Adhesive, stabilized type as recommended by floor manufacturer to suit material and substrate condition.

Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.
Leveling Compound: Latex type as recommended by flooring manufacturer.

EXPANSION JOINT MATERIAL: Provide expansion joint material in the floor finish over saw-cuts in the slab. Match color with resilient flooring.

PART THREE - EXECUTION

INSPECTION

Installer must examine substrates and conditions to which resilient flooring is to be applied and notify Contractor and Architect in writing of conditions detrimental to proper and timely completion. Do not proceed with work until unsatisfactory conditions have been corrected acceptable to installer.

PREPARATION

Broom clean or vacuum surfaces to be covered, and inspect subfloor. Start of flooring installation indicates acceptance of subfloor conditions and full responsibility for completed work.

Use leveling compound as recommended by flooring manufacturer for filling small cracks and depressions in subfloors.

Perform bond and moisture test on concrete slabs to determine that concrete surfaces are sufficiently cured, dried and ready to receive flooring.

Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer’s directions.

INSTALLATION

Install flooring using method indicated in strict compliance with manufacturer’s recommendations. Extend flooring into the spaces, door reveals, and into closets and similar openings.

In areas indicated to receive both resilient flooring and carpet, verify all floor covering dimensions prior to laying out resilient flooring. If resilient flooring is installed before carpet, protect edges with temporary wood strips or other approved method.

Maintain reference markers, holes, or openings that are in place of plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-permanent marking device.

Install flooring on covers for telephone and electrical ducts, and other such items as occur within finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on these covers. Tightly cement edges to perimeter of floor around covers and to covers.

Tightly cement flooring to subbase without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections. Hand roll flooring at perimeter of each covered area to assure adhesion.

TILE FLOORS:

Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room area of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown.

Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped or deformed tiles are not acceptable.

Lay tile in “checkerboard” fashion with grain reversed in adjacent tiles.

Adhere tile flooring to substrates using full spread of adhesive applied in compliance with flooring manufacturer’s directions.

ACCESSORIES:

EDGE STRIPS:

Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.

Apply overlap metal edge strips where shown on drawings, and after flooring installation. Secure units to substrate with countersunk stainless steel anchors, complying with manufacturer's recommendations.

ADJUSTMENTS

Replace all luxury vinyl flooring tile that does not stay down or properly adhere to subfloor.

CLEANING & PROTECTION

Remove any excess adhesive or other surface blemishes, using neutral type cleaners as recommended by flooring manufacturer. Protect installed flooring heavy Kraft paper or other covering.

After completion of Project and just prior to final inspection of work, thoroughly clean floors and accessories.

Apply polish and buff, with type of polish, number of coats, and buffing procedures in compliance with flooring manufacturer's instructions.

END OF SECTION 09660

SECTION 09900 – PAINTING

PART ONE - GENERAL

DESCRIPTION

Provide painting for all exposed interior and exterior surfaces, including items on roof, unless specifically excluded. Surfaces include but are not limited to:

All exposed steel in the pavillion shall be painted. This includes purlins, bents, girts, all exposed miscellaneous exposed steel, hvac ductwork and rigid frames. Colors shall be selected by Architect.
All electrical conduits and exposed wire mould shall be painted to match wall color.
All roof penetrations shall be center in the roof panel. All penetrations shall be painted.
Painter shall provide colored caulk @ door frames (frame meeting floor)
Structural Steel.
Miscellaneous metal fabrications.
Galvanized metal and other sheet metal. (All exposed ductwork)
Rooftop mechanical equipment.
Hollow metal work.
Concrete masonry.
Painted wall graphics, striping & logos.
Back priming of wood.
Doors & frames.
Exposed wood.
Texturing and painting gypsum board.
Exposed conduit, piping (including copper), hangers, supports and fasteners, and ductwork.
Cast iron piping, where exposed.
Items which have received a factory prime or shop coat finish.
Surfaces, including interiors of ducts, behind grilles or any other form of construction which will be visible from any angle.
Interior and exterior plaster.
Provide and install all metal corner beads for taping and floating drywall.

DEFINITION

The terms “paint” or painting” as used in this section in a general sense have reference to sealers, primers, stains, oil, alkyd, latex, polyurethane, and enamel-type paints and the application of these materials.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions
Cast-In-Place Concrete: Section 03300
Membrane Waterproofing: Section 07110
Gypsum Drywall Systems: Section 09250

OUALITY ASSURANCE

Workmanship: All workmanship is to be of the very highest standard with all materials evenly spread and smoothly flowed on without sagging, runs, or other defects affecting the utility or appearance of the work.

Materials applied with inferior workmanship shall be removed and reapplied in an acceptable manner, at no additional cost to Owner or Architect.

Unless specified otherwise, all materials shall be of the best grade of first line paint. Products equivalent to those specified and manufactured by the following manufacturers are acceptable: PPG Industries, Sherwin Williams, & Tnemec or approved equal.

SUBMITTALS

Color Samples: Furnish Architect a complete range of color samples, in duplicate, of products to be used for preparation of color schedules. Architect will provide complete schedule of colors.

This subcontractor shall then prepare samples at the job as required until the colors and textures are satisfactory. Subcontractor will submit shop drawings on all paints.

Certificate: Furnish paint manufacturer's certification that all paint materials proposed for use or the project are the best grade of first line products.

PRODUCT DELIVERY, STORAGE & HANDLING

Deliver materials in original, unopened containers with contents labeled. Keep space used for storage of equipment and materials in clean and orderly condition. Keep all waste and paint rags in metal containers, tightly covered or safely disposed of at end of each working day. Take every precaution to avoid fire. Provide approved type of fire extinguisher immediately outside each paint storage space.

JOB CONDITIONS

Coordinate with other trades to insure adequate illumination, ventilation and dust-free environment during application and drying of paint.

Maintain temperature and humidity within manufacturer's recommend tolerances.
In the absence of specific instructions by manufacturer to the contrary, exterior painting shall not be done during cold or damp weather nor when the temperature is likely to drop below 32 degrees F. during the curing cycle of the applied finish.

ADDITIONAL PAINT

Provide Owner, at completion of job, one unopened gallon of paint each color selected, in tightly sealed containers labeled with color sample and a list of room numbers where used.

PART TWO - PRODUCTS

MATERIALS

Compound for Gypsum Wallboard Texture: Vinyl bound aggregated texture material in powdered form, mixed with water to produce a rough sand finish effect.

Texture:Texture grade selected by Architect.

Paint Materials: Finish coats to be from same manufacturer wherever possible. Base and intermediate coats shall be products recommended by manufacturer of finish coat. Refer to Paint Schedule for materials.

Gypsum Wallboard Treatment Materials

Joint Tapes: Plain or perforated ASTM C-475.
Corner Beads: Galvanized steel nailed to framing thru panels.
"Dur-a-bead" (U.S.G.) or "Standard Corner Bead" (Nat'l. Gyp.)
Compound for Embedding: ASTM C-475.

Joint Treatment: USG Perf-A-Tape System. Provide U.S.G. Ready-Mix components at gypsum board panels.

INSPECTION OF SURFACES

Before starting any work, inspect surfaces to receive paint finishes for defects which cannot be corrected by the usual puttying and sanding and cleaning, and which would prevent satisfactory results. If such defects are discovered, notify the Contractor and await corrective action.

Commencing of work constitutes acceptance of surfaces and thereafter this Contractor shall be fully responsible for satisfactory work.

SURFACE PREPARATION

1) Aluminum
Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.

2) Block (Cinder and Concrete)
Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75°F.The pH of the surface should be between 6 and 9,unless the products to be used are designed to be used in high pH environments such as Loxon. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a patching compound such as ConSeal.

3) Brick
Must be free of dirt, loose and excess mortar, and foreign material. All brick should be allowed to weather for at least one year followed by wire brushing to remove efflorescence. Treat the bare brick with one coat of Loxon Exterior Acrylic Masonry Primer, or Loxon Conditioner.

4) Cement Composition Siding/Panels
Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. The pH of the surface should be between 6 and 9,unless the products to be used are designed to be used in high pH environments such as Loxon.

5) Drywall (Interior and Exterior)
Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting. Exterior surfaces must be spackled with exterior grade compounds.

6) Exterior Composition Board (Hardboard)
Some composition boards may exude a waxy material that must be removed with a solvent prior to coating. Whether factory primed or unprimed, exterior composition board siding (hardboard) must be cleaned thoroughly and primed with an alkyd primer.

7) Galvanized Metal
Allow to weather a minimum of 6 months prior to coating. Clean per SSPC-SP1 using detergent and water or a degreasing cleaner, then prime as required. When weathering is not possible or the surface has been treated with chromate's or silicates, first Solvent Clean per SSPC-SP1 and apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP7 is necessary to remove these treatments.

8) Plaster
Must be allowed to dry thoroughly for at least 30 days before painting. Rooms must be ventilated while drying; in cold, damp weather, rooms must be heated. Damaged areas must be repaired with an appropriate patching material. Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1-pint household vinegar to 1 gallon of water.Repeat until the surface is hard, rinse with clear water and allow to dry. The pH of the surface should be between 6 and 9, unless the products to be used are designed to be used in high pH environments.

9) Previously Coated Surfaces
Maintenance painting will frequently not permit or require complete removal of all old coatings prior to repainting. However, all surface contamination such as oil, grease, loose paint, mill scale, dirt, foreign matter, rust, mold, mildew, mortar, efflorescence, and sealers must be removed to assure sound bonding to the tightly adhering old paint. Glossy surfaces of old paint films must be clean and dull before repainting. Thorough washing with an abrasive cleanser will clean and dull in one operation, or, wash thoroughly and dull by sanding. Spot prime any bare areas with an appropriate primer. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system. Check for compatibility by applying a test patch of the recommended coating system, covering at least 2 to 3 square feet. Allow to dry one week before testing adhesion per ASTM D3359. If the coating system is incompatible, complete removal is required.

10) Solvent Cleaning
Solvent Cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation. For complete instructions, refer to Steel Structures Paint Council Surface Preparation Specification No. 1. (SSPC-SP1)

11) Hand Tool Cleaning

Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Mill scale, rust, and paint are considered adherent if they cannot be removed by lifting with a dull putty knife. Before hand tool cleaning, remove visible oil, grease, soluble residues, and salts by the methods outlined in SSPCSP1. For complete instructions, refer to Steel Structures Paint Council Surface Preparation Specification No. 2 (SSPC-SP2)

12) Power Tool Cleaning
Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Mill scale, rust, and paint are considered adherent if they cannot be removed by lifting with a dull putty knife. Before power tool cleaning, remove visible oil, grease, soluble residues, and salts by the methods outlined in SSPCSP1. For complete instructions, refer to Steel Structures Paint Council Surface Preparation Specification No.3.(SSP-PC3)

13) Stucco
Must be clean and free of any loose stucco. If recommended procedures for applying stucco are followed, and normal drying conditions prevail, the surface may be painted in 30 days. The pH of the surface should be between 6 and 9, unless the products to be used are designed to be used in high pH environments such as Loxon.

14) Wood (Exterior)
Must be clean and dry. Prime and paint as soon as possible. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

15) Wood (Interior)
All finishing lumber and flooring must be stored in dry, warm rooms to prevent absorption of moisture, shrinkage, and roughening of the wood. All surfaces must be sanded smooth, with the grain, never across it. Surface blemishes must be corrected and the area cleaned of dust before coating.

16) Vinyl Siding
Vinyl siding must be cleaned thoroughly by scrubbing with a warm, soapy water solution. Rinse

ADDITIONAL PREPARATION OF SURFACES

Surfaces to which paint is applied shall be dry and clean. Patch or fill as required. Wash metal surfaces thoroughly with benzine or mineral spirits before applying paint materials and clean galvanized iron thoroughly with solvent or zinc phosphate pretreatment solution.

All woodwork and cabinets receiving paint or transparent finishes shall be sandpapered before priming and between each coat, to produce a smooth finish, free from scratches and brush marks.

After surfaces have been primed, apply putty or an elastic compound in all nail holes, cracks, crevices, or open joints between structural steel, miscellaneous steel or other adjoining materials. Finish putty or compound flush with adjoining surfaces. Putty shall match wood on varnished or lacquered surfaces.

After required cleaning and sanding of surfaces, should the painter or the Architect's representative find such surfaces or condition unacceptable, he shall at once stop work on this portion of the project until the faulty conditions are corrected.

Back Priming: Back prime wood material as specified in Finish Carpentry and Millwork.

Tape, float, sand and install all corner beads to properly prepare gypsum drywall partitions for required finish.

APPLICATION

Apply all paint in accordance with manufacturer's directions. Apply paint with brush or roller. No spray applications allowed unless approved in writing by Architect.

Primer/filler coat on concrete masonry units shall be applied so as to fill all pinholes, voids, cavities and the like so as to achieve a uniform finished surface on the face of all units.

The undercoats for finishes shall be tinted slightly off the shade of the final coat. Each coat shall be inspected and approved by the Architect before application of succeeding coats. This subcontractor assumes all responsibility to repaint or refinish any area in question. Paint on steel or iron shall be a different shade for each coat.

No gypsum board joint and corner treatment, painting, or special wall covering will be required above ceiling, behind built-in millwork, behind wood paneling, behind acoustical tile, ceramic tile, or in other permanently concealed locations (unless specifically called for otherwise on drawings).

lop and bottom of wood doors shall be sealed after fitting and adjusting.

TOUCH UP AND CLEAN

After completion, touch-up and restore finish where damaged and leave in good condition. Remove all unused materials and empty containers, clean paint from any surface not to be painted such as window glass, hardware, fixtures, finish floor, etc., and leave premises broom clean.

PROTECTION OF WORK

This subcontractor shall be fully responsible for the protection of his work and that of others from injury or staining. He shall provide a sufficient number of drip cloths to full protect adjacent finished work. He shall store his materials in a separate building from the one under construction.

SURFACES AND ITEMS NOT REQUIRING PAINTING UNDER THIS SECTION

Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under the various sections for structural steel, miscellaneous metal items, hollow metal work and shop fabricated or factory-built mechanical and electrical equipment or accessories.

Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as plastic toilet enclosures, acoustic materials, finished mechanical and electrical equipment including light fixtures, switchgear and distribution cabinets. Pre-finished items shall receive filed “touch-up” with same paint as original finish.

Concealed Surfaces: Unless otherwise indicated, painting is not required on wall or ceiling surfaces in concealed areas and inaccessible areas, such as foundation spaces, furred areas, pipe spaces, duct shafts and elevator shafts, as applicable to this project.

Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting except as otherwise specified.

Operating Parts & Labels: Do not paint any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts, unless otherwise indicated.

Do not paint over any code-required labels, such as Underwriter’s Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

Miscellaneous Surfaces: Do not paint concrete floors, except as scheduled otherwise, gypsum wallboard scheduled to receive other finish materials, or Pre-

Engineered Building structure and exterior wall openings except as scheduled otherwise.

PAINT SCHEDULE

The following treatment (as applicable) shall be applied to surfaces as indicated on Finish Schedule and detailed on drawings. Prime coats specified below will not be required on items delivered with prime or shop coats already applied.

Number of coats called for shall be minimum; additional coat or coats shall be applied if required to achieve satisfactory results.

APPROVED MANUFACTURER

Brand name indicated below is Sherwin Williams. Provide painting materials produced by single manufacturer. Paint supplier must submit shop drawings for each individual surface.

SCHEDULE
Interior Finishes

1. Ferrous Metal Other Than Galvanized
Primer: B66W00310 – Pro Industrial Pro-Cryl Universal Acrylic Primer Off White
Finish: B66W00651 - 2cts-Pro Industrial High Performance Acrylic – Semi-Gloss

2. Exterior & Interior Concrete Block/Plaster (Epoxy) All Painted CMU
Primer: B42W00046 - Heavy Duty Block Filler White
Finish: B73W00361 - 2cts- Pro Industrial Waterbased Epoxy
Verify Block Filler will adhere to Dryblock CMU/Mortar for proper bridging.

3. Interior Metal Galvanized
Primer: B66W00310 – Pro Industrial Pro-Cry Universal Acrylic Primer
Finish: B66W00651 - 2cts- Pro Industrial High Performance Acrylic – Semi-Gloss

4. Interior Wood
Primer: B28W08111 – Premium Wall & Wood Primer, Interior Latex White
Finish: B34W00251 - 2cts-ProMar® 200 Interior Alkyd Semi-Gloss Extra White

5. Interior Stained Wood
Coat 1: A49H00201 – Wood Classic Interior Oil Stain
Coat 2: B26V00043 - Wood Classics® FastDry Sanding Sealer Clear

Coat 3: A66V00391 - Wood Classics® FastDry Varnish High Gloss Clear

6. Interior Gypsum Board (epoxy)
Primer: B28W02600 - ProMar 200 Zero VOC Interior Latex Primer White
Finish: B73W00361 - 2cts- Pro Industrial Waterbased Epoxy Eg-Shell

7. Interior Gypsum Board
Primer: B28W02600 - ProMar 200 Zero VOC Interior Latex Primer White
Finish: B24W02651 - 2cts- ProMar 200 Zero VOC Interior Latex Eg-Shell

Exterior Finishes
1. Exterior Metal Galvanized
Primer: B66W00310 – Pro Industrial Pro-Cry Universal Acrylic Primer Finish White
Finish: B66W00651 - 2cts-Pro Industrial High Performance Acrylic – Semi Gloss

2. Exposed Concrete Structure & CMU
Primer: A24W00300 - Loxon Concrete And Masonry Int/Ext Latex Primer White
Finish: B66W00311 - 2cts-Pro Industrial High Performance Acrylic Eg-Shell Coating

3. Exterior Ferrous Metal Other Than Galvanized
Primer: B66W00310 – Pro Industrial Pro-Cry Universal Acrylic Primer Finish White
Finish: B66W00651 - 2cts-Pro Industrial High Performance Acrylic – Semi Gloss

4. Wood
2 Coats: K33W00151 – Duration Coating Exterior Latex Satin

5. Cement Board
Primer: A24W08300 - Loxon Concrete And Masonry Int/Ext Latex Primer White
Finish: A89W01151 - 2cts-SuperPaint Exterior Latex Satin

6. Mechanical Work (Exposed on interior and exterior of buildings)

Exposed HVAC ductwork shall be painted and color selected by Architect

Exposed insulated surfaces covered with canvas, including piping, converters, expansion tanks, ductwork, etc., shall receive a sizing coat plus two (2) coats of paint.

Exposed uninsulated piping and all supports and hangers: Paint as indicated in Paint Schedule.

Exposed insulated surfaces having a vapor barrier jacket shall have a sealer and one (1) coat of paint.

Exposed hot piping shall have two (2) coats of high temperature aluminum paint suitable for 1200 degrees F.

Exposed sheet metal surfaces of ductwork and duct hangers, etc: Paint as indicated in Paint Schedule.

Equipment, such as tans, pumps, factory air handling units, motors, etc., having only factory primed finishes: Paint at indicated in Paint Schedule.

7. Electrical Work, Pipes, Boxes, Etc. (Exposed on interior and exterior of buildings)

Paint as indicated in Paint Schedule.

8. Unscheduled Surfaces

Any surface exposed to view and not scheduled in this "Paint Schedule" shall be cleaned and receive a minimum of one (1) coat of primer and two finish coats of paint of type approved by the Architect.

9. Parking Lot Striping

Coat 1: TM5626/27 – Hotline Fast Low Voc Acrylic Traffic Marking Paint
Handicap Striping – Blue
Parking Striping – Yellow
Sidewalk Edge Striping – Yellow

10. Stained Concrete

H&C Acetone Dyestain
High Polished with Diamond Cut Smoothing Heated Burned in Finish

END OF SECTION 09900

SECTION 09901 – PVC ROOFING MEMBRANES

Description - PVC Roofing System

The specifications herein described are general performance guidelines created from information provided by project specifiers and design professionals. They are intended to facilitate and assist in the selection of roof materials, not as a substitute for the judgment of a design professional. The ultimate selection of a specification for a particular roof remains the responsibility of the building owner and their design professionals.

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. New system over metal deck.

B. Manufacturer® PVC thermoplastic membrane attached with fleece back.

C. High Density ISO HD Cover board, attached with mechanical fasteners.

D. 2.6 inches of Polyisocyanurate – insulation board for filler and a R-value of 30

E. Poly iso board and 1/8” Taper system.

F. Prefabricated flashings, corners, parapets, stacks, vents, and related details.

G. Fasteners, adhesives, and other accessories required for a complete roofing installation.

H. Traffic Protection.

I. 20 year warranty

1.2 REFERENCES

A. NRCA - The NRCA Roofing and Waterproofing Manual.

B. ASCE 7 - Minimum Design Loads For Buildings And Other Structures.

C. UL - Roofing Materials and Systems Directory, Roofing Systems (TGFU.R10128).

D. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.

E. ASTM D 751 - Standard Test Methods for Coated Fabrics.

F. ASTM D 4434 - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing.

G. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.

H. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

1.3 SYSTEM DESCRIPTION

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.

C. Physical Properties:

1. Roof product must meet the requirements of Type III PVC sheet roofing as defined by ASTM D 4434 and must meet or exceed the following physical properties.
2. Thickness: 50 mil, nominal, in accordance with ASTM D 751.
3. Thickness Over Scrim: ≥ 21 mil in accordance with ASTM D 751.
4. Breaking Strengths: ≥ 390 lbf. (MD) and ≥ 438 lbf. (XMD) in accordance with ASTM D 751, Grab Method.
5. Elongation at Break: ≥ 31% (MD) and ≥ 31% (XMD) in accordance with ASTM D 751, Grab Method.
6. Heat Aging in accordance with ASTM D 3045: 176 °F for 56 days. No sign of cracking, chipping or crazing. (In accordance with ASTM D 4434).
7. Factory Seam Strength: ≥ 417 lbf. in accordance with ASTM D 751, Grab Method.
8. Tearing Strength: ≥ 132 lbf. (MD) and ≥ 163 lbf. (XMD) in accordance with ASTM D 751, Procedure B.
9. Low Temperature Bend (Flexibility): Pass at -40 °F in accordance with ASTM D 2136.
10. Accelerated Weathering: No cracking, checking, crazing, erosion or chalking after 5,000 hours in accordance with ASTM G 154.
11. Linear Dimensional Change: < 0.5% in accordance with ASTM D 1204 at 176 ± 2 °F for 6 hours.
12. Water Absorption: < 1.7% in accordance with ASTM D 570 at 158 °F for 166 hours.
13. Static Puncture Resistance: ≥ 56 lbs. in accordance with ASTM D 5602.
14. Dynamic Puncture Resistance: ≥ 14.7 ft-lbf. in accordance with ASTM D 5635.

D. Cool Roof Rating Council (CRRC):

1. Membrane must be listed on CRRC website.
   a. Initial Solar Reflectance: ≥ 24%
   b. Initial Thermal Emittance: ≥ 88%
   c. Initial Solar Reflective Index (SRI): ≥ 23

d. 3-Year Aged Solar Reflectance: ≥ 24%

e. 3-Year Aged Thermal Emittance: ≥ 91%

f. 3-Year Aged Solar Reflective Index (SRI): ≥ 25

1.4 SUBMITTALS

A. Submit under provisions of Section 01340.

B. PVC Manufacturer data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.
4. Maintenance requirements.

C. Shop Drawings: Indicate insulation pattern, overall membrane layout, field seam locations, joint or termination detail conditions, and location of fasteners.

D. Verification Samples: For each product specified, two samples, representing actual product, color, and finish.

1. 4 inch by 6 inch sample of roofing membrane, of color specified.
2. 4 inch by 6 inch sample of walkway pad.
3. Termination bar, fascia bar with cover, drip edge and gravel stop if to be used.
4. Each fastener type to be used for installing membrane, insulation/recover board, termination bar and edge details.

E. Installer Certification: Certification from the roofing system manufacturer that Installer is approved, authorized, or licensed by manufacturer to install roofing system.

F. Manufacturer's warranties.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with manufacturer's installation instructions.

B. Manufacturer Qualifications: A manufacturer specializing in the production of PVC membranes systems and utilizing a Quality Control Manual during the production of the membrane roofing system that has been approved by and is inspected by Underwriters Laboratories.

C. Installer Qualifications: Roofer is required to be a Master Elite / Platinum Contractor. Company specializing in installation of roofing systems similar to those specified in this project and approved by the roofing system manufacturer.

D. Source Limitations: Obtain components for membrane roofing system from roofing membrane manufacturer.

E. There shall be no deviations from the roof membrane manufacturer's specifications or the approved shop drawings without the prior written approval of the manufacturer.

1.6 REGULATORY REQUIREMENTS

A. Conform to applicable code for roof assembly wind uplift and fire hazard requirements.

B. Fire Exposure: Provide membrane roofing materials with the following fire-test-response characteristics. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure:
    a. Class A; ASTM E 108, for application and roof slopes indicated.
2. Fire-Resistance Ratings: Comply with ASTM E 119 for fire-resistance-rated roof assemblies of which roofing system is a part.
3. Conform to applicable code for roof assembly fire hazard requirements.

C. Wind Uplift:

1. Roofing System Design: Provide a roofing system designed to resist uplift pressures calculated according to the current edition of the ASCE-7 Specification *Minimum Design Loads for Buildings And Other Structures*.

1.7 PRE-INSTALLATION MEETING

A. Convene meeting not less than one week before starting work of this section.

B. Review methods and procedures related to roof deck construction and roofing system including, but not limited to, the following.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing installer, roofing system manufacturer's representative, deck installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
2. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
4. Review structural loading limitations of roof deck during and after roofing.
5. Review base flashings, special roofing details, roof drainage, roof

penetrations, equipment curbs, and condition of other construction that will affect roofing system.

6. Review governing regulations and requirements for insurance and certificates if applicable.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review roof observation and repair procedures after roofing installation.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Store roof materials and place equipment in a manner to avoid permanent deflection of deck.

E. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 WARRANTY

A. Contractor's Warranty: The contractor shall warrant the roof application with respect to workmanship and proper application for two (2) years from the effective date of the warranty issued by the manufacturer.

B. Manufacturer's Warranty: Must be no-dollar limit type and provide for completion of repairs, replacement of membrane or total replacement of the roofing system at the then-current material and labor prices throughout the life of the warranty. In addition the warranty must meet the following criteria:

1. Warranty Period: 20 years from date issued by the manufacturer.
2. Must provide positive drainage (no ponding water).
3. No exclusion for damage caused by biological growth.
4. Issued direct from and serviced by the roof membrane manufacturer.
5. Transferable for the full term of the warranty.

<u>PART 2 - PRODUCTS</u>

2.1 MANUFACTURER

A. Manufacturer: Performance Specification based upon Duro Last Roofing, Inc.,

B. Substitutions: Other manufacturers may submit to meet this performance specification. Substitutions must be submitted prior to bidding for qualifications and approval. Submittal substitution must be submitted 10 days prior to bid date.

2.2 ROOFING SYSTEM COMPONENTS

A. Roofing Membrane: PVC thermoplastic membrane with fleece conforming to ASTM D 4434, type III, fabric-reinforced, PVC, NSF/ANSI 347 Gold or Platinum Certification, and a product-specific third-party verified Environmental Product Declaration. Membrane properties as follows:

   1. Thickness:
      a. 60 mil.
   2. Exposed Face Color:
      a. Light Gray
      b. Minimum NSF 347 Gold Certified
   3. Minimum recycle content 7% post-industrial and 0% post-consumer.
   4. Recycled at end of life into resilient flooring or concrete expansion joints.

B. Accessory Materials: Provide accessory materials supplied by or approved for use by manufacturer.

   1. Sheet Flashing: Manufacturer's standard reinforced PVC sheet flashing.
   2. Manufacturer Prefabricated Flashings: manufactured using Manufacturer's standard reinforced PVC membrane.
      a. Stack Flashings.
      b. Curb Flashings.
      c. Inside and Outside Corners.
   3. Sealants and Adhesives: Compatible with roofing system and supplied by Manufacturer.
      a. Fleece Membrane Adhesive or an approve equal.
      b. Caulk
      c. Strip Mastic.
   4. Slip Sheet: Compatible with roofing system and supplied by Manufacturer.
   5. High Density Polyisocyanurate – ¼” Densdeck Prime for this cover board.
   6. Two Layers of 2.6 Polyisocyanurate – insulation board for filler and a R-value of 30.
   7. 1/8” Tapered EPS Insulation – for proper sloped roofs.
   8. Fasteners and Plates: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for

fastening membrane and insulation to substrate. Supplied by Manufacturer Roofing, Inc.

a. #14 Heavy Duty Fasteners.

b. Cleat Plates.

c. 3 inch Metal Plates.

9. PVC Anchors

10. Termination and Edge Details: Supplied by Manufacturer

a. Termination Bar.

b. Universal 2-Piece Compression Metal System.

c. VersaTerm™ Edge.

d. Kynar Steel Fascia Cover.

11. Vinyl Coated Metal: Supplied by Manufacturer Roofing, Inc. 24 gauge, hot-dipped galvanized, grade 90 metal with a minimum of 17 mil of Manufacturer membrane laminated to one side.

12. Two-Way Roof Vents: Supplied by Manufacturer Roofing, Inc. Install a minimum of 1 vent for each 1,000 ft^2 (93 m^2) of roof area. (if required by manufacturer)

C. Walkways:

1. Provide non-skid, maintenance-free walkway pads in areas of heavy foot traffic and around mechanical equipment.

a. Manufacturer Roof Trak® III Walkway Pad.

2.3 ROOF INSULATION

A. General:

1. Provide preformed roof insulation boards that comply with requirements and referenced standards, as selected from manufacturer's standard sizes.
2. Provide preformed saddles, crickets, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

B. Polyisocyanurate Board Insulation: Complying with ASTM C 1289, Type II, felt or glass-fiber mat facer on both major surfaces. Material as supplied by roof system manufacturer.

1. Polyisocyanurate (flat).
2. Glass-faced polyisocyanurate (tapered).

2.4 ROOF INSULATION ACCESSORIES

A. General: Provide roof insulation accessories approved by the roof membrane manufacturer and as recommended by insulation manufacturer for the intended use.

B. Fasteners: Provide factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening insulation and/or insulation cover boards in conformance to specified design requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that the surfaces and site conditions are ready to receive work.

B. Verify that the deck is supported and secured.

C. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.

D. Verify that the deck surfaces are dry and free of standing water, ice or snow.

E. Verify that all roof openings or penetrations through the roof are solidly set.

F. If substrate preparation is the responsibility of another contractor, notify Architect of unsatisfactory preparation before proceeding.

G. Prior to re-covering an existing roofing system, conduct an inspection of the roof system accompanied by a representative of the membrane manufacturer or an authorized contractor.
   1. Determine required fastener type, length, and spacing.
   2. Verify that moisture content of existing roofing is within acceptable limits.
   3. Identify damaged areas requiring repair before installation of new roofing.
   4. Conduct core cuts as required to verify information required.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Surfaces shall be clean, smooth, free of fins, sharp edges, loose and foreign material, oil, grease, and bitumen.

D. Re-Roofing Over Existing Single-Ply System:
   1. Remove all loose or high fasteners.
   2. Membrane contaminated with bitumen must be immediately cleaned. If cleaning does not remove the bitumen, the contaminated membrane must be replaced, or covered with both a slip sheet and new membrane.
   3. Blisters, buckles and other surface irregularities must be repaired or removed. If the damage is extensive, an approved rigid board insulation or a cover board must be installed.
   4. When the system is smooth or granular-surfaced, any approved slip sheet, insulation or cover board may be used to provide separation of the roof system and new membrane. Manufacturer fan folds may be used if the surface is pea gravel or crushed stone which is ¼ to 3/8 inch in size and has been leveled and maintained at 4 psf. For larger rock/gravel, utilize an approved rigid insulation or cover board.

5. If rock/gravel surfacing is removed, an approved fan fold, rigid insulation or cover board must be used. If embedded rock/gravel remains that protrudes out of the deck more than ¼ inch, do not use fan fold board. Instead, use an approved cover board or rigid insulation.
6. When installing polystyrene insulation over coal tar pitch or asphalt-based roof systems, a slip sheet must be used between the insulation and existing roof.

3.3 INSTALLATION

A. Install insulation in accordance with the roof manufacturer's requirements.

B. Insulation Cover Board: ½” High Density ISO HD.

1. Use only fasteners, stress plates and fastening patterns accepted for use by the roof manufacturer. Fastening patterns must meet applicable design requirements.
    a. Install fasteners in accordance with the roof manufacturer’s requirements. Fasteners that are improperly installed must be replaced or corrected.
    b. Attach boards in parallel courses with end joints staggered 50% and adjacent boards butted together with no gaps greater than ¼ inch.

C. Roof Membrane: 60 mil, Manufacturer® PVC thermoplastic membrane

1. Use only fasteners, stress plates and fastening patterns accepted for use by the roof manufacturer. Fastening patterns must meet the applicable design requirements.
2. Install fasteners in accordance with the roof manufacturer’s requirements. Fasteners that are improperly installed shall be replaced or corrected.
3. Mechanically fasten membrane to the structural deck utilizing fasteners and fastening patterns that in accordance with the roof manufacturer’s requirements.
4. Cut membrane to fit neatly around all penetrations and roof projections.
5. Unroll roofing membrane and positioned with a minimum 6 inch overlap.

D. Seaming:

1. Weld overlapping sheets together using hot air. Minimum weld width is 1-1/2 inches.
2. Check field welded seams for continuity and integrity and repair all imperfections by the end of each work day.

E. Membrane Termination/Securement: All membrane terminations shall be completed in accordance with the membrane manufacturer’s requirements.

1. Provide securement at all membrane terminations at the perimeter of each roof level, roof section, curb flashing, skylight, expansion joint, interior wall, penthouse, and other similar condition.
2. Provide securement at any angle change where the slope or combined

slopes exceeds two inches in one horizontal foot.

F. Flashings: Complete all flashings and terminations as indicated on the drawings and in accordance with the membrane manufacturer's requirements.

1. Provide securement at all membrane terminations at the perimeter of each roof level, roof section, curb flashing, skylight, expansion joint, interior wall, penthouse, and other similar condition.
    a. Do not apply flashing over existing thru-wall flashings or weep holes.
    b. Secure flashing on a vertical surface before the seam between the flashing and the main roof sheet is completed.
    c. Extend flashing membrane a minimum of 6 inches (152 mm) onto the main roof sheet beyond the mechanical securement.
    d. Use care to ensure that the flashing does not bridge locations where there is a change in direction (e.g. where the parapet meets the roof deck).
2. Penetrations:
    a. Flash all pipes, supports, soil stacks, cold vents, and other penetrations passing through the roofing membrane as indicated on the Drawings and in accordance with the membrane manufacturer's requirements.
    b. Utilize custom prefabricated flashings supplied by the membrane manufacturer.
    c. Existing Flashings: Remove when necessary to allow new flashing to terminate directly to the penetration.
3. Pipe Clusters and Unusual Shapes:
    a. Clusters of pipes or other penetrations which cannot be sealed with prefabricated membrane flashings shall be sealed by surrounding them with a prefabricated vinyl-coated metal pitch pan and sealant supplied by the membrane manufacturer.
    b. Vinyl-coated metal pitch pans shall be installed, flashed and filled with sealant in accordance with the membrane manufacturer's requirements.
    c. Pitch pans shall not be used where prefabricated or field fabricated flashings are possible.

G. Roof Drains:

1. Coordinate installation of roof drains and vents specified in Section 15146 - Plumbing Specialties.
2. Remove existing flashing and asphalt at existing drains in preparation for sealant and membrane.
3. Provide a smooth clean surface on the mating surface between the clamping ring and the drain base.

H. Edge Details:

1. Provide edge details as indicated on the Drawings. Install in accordance with

the membrane manufacturer's requirements.

2. Join individual sections in accordance with the membrane manufacturer's requirements.
3. Coordinate installation of metal flashing and counter flashing specified in Section 07620.
4. Manufactured Roof Specialties: Coordinate installation of copings, counter flashing systems, gutters, downspouts, and roof expansion assemblies specified in Section 07600.

I. Walkways:

1. Install walkways in accordance with the membrane manufacturer's requirements.
2. Provide walkways where indicated on the Drawings.
3. Install walkway pads at roof hatches, access doors, rooftop ladders and all other traffic concentration points regardless of traffic frequency. Provided in areas receiving regular traffic to service rooftop units or where a passageway over the surface is required.
4. Do not install walkways over flashings or field seams until manufacturer's warranty inspection has been completed.

J. Water cut-offs:

1. Provide water cut-offs on a daily basis at the completion of work and at the onset of inclement weather.
2. Provide water cut-offs to ensure that water does not flow beneath the completed sections of the new roofing system.
3. Remove water cut-offs prior to the resumption of work.
4. The integrity of the water cut-off is the sole responsibility of the roofing contractor.
5. Any membrane contaminated by the cut-off material shall be cleaned or removed.

3.4 FIELD QUALITY CONTROL

A. The membrane manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors shall be addressed and final punch list completed.

3.5 PROTECTION

A. Protect installed roofing products from construction operations until completion of project.

B. Where traffic is anticipated over completed roofing membrane, protect from damage using durable materials that are compatible with membrane.

C. Repair or replace damaged products after work is completed.

END OF SECTION 09901

ECTION 10425 – PLAQUE AND SIGNS

PART ONE - GENERAL

DESCRIPTION

Provide and install all plaque and signs indicated on drawings and specified herein.

Include all clips, supports, screws and mounting brackets for complete installation.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions

SUBMITTALS

Submit manufacturers descriptive brochures and necessary supplemental detailed information indicating quality, finishes and accessories required for complete installation.

Camera ready layout shall be prepared by the manufacturer of graphic panel directory and approved by Architect prior to fabrication.

Architect shall select colors from manufacturers full range of colors.

PRODUCT DELIVERY, STORAGE, AND HANDLING

Deliver items in manufacturers original unopened protective packaging.

Store materials in original protective packaging to prevent soiling, physical damage or wetting.

Handle so as to prevent damage to finished surfaces.

PART TWO - PRODUCTS

MATERIALS

ROOM SIGNS & Miscellaneous: Series Graphic Blast (FG) manufactured by Best Signs Manufacturing Company or an approved equivalent by Kroy or National Signage Affliates. (Provide at all rooms if not indicated) These signs have plastic frame around the signs) See architectural drawings for sizes. If not indicated, provide 8” x 12” rooms signs. (Names will be given at a later date if not shown on drawings)

Signs shall have the following characteristics:

1. Tactile characters/symbols shall be raised 1/32 inch from sign plate face [for ADA compliance].

2. Signs shall be of one-piece construction; added-on and/or engraved characters are unacceptable unless it's a circle over a triangle or vice versa.

3. Text [on signs needing to comply with ADA] shall be accompanied by Grade 2 braille.

4. All letters, numbers and/or symbols shall contrast with their background – either light characters on a dark background or dark characters on a light background. Characters and background shall have matte finish.

Shall conform to ADA requirements.

BUILDING PLAQUE: Tablet to be aluminum cast. Mortar and face of raised letters are to be cast black finish and background is to be pebble texture. Background shall be sprayed with dark oxidized. Plaque shall be chemically cleaned and etched and treated with alodine. Two (2) coats of clear acrylic lacquer shall be sprayed on completed plaque. Tablet is to be 30" wide by 36" high with bevel edge border design. Letter styled shall be Craw Clarendon. Mounting attachments for mounting tablet on masonry wall shall be furnished with concealed fasteners (FMM-1). Manufactured by Metal Arts, Division of L & H Mfg. Co. & The Southwell Co. or an approved equal

Submit shop drawings of exact text and composition prior to casting.
Included on Plaque: (Provide 2 plaques)

1. Name of Building (See drawing title)
2. Guidance For Behavioral Health Logo
3. Guidance For Behavioral Health
4. Board Members – All board members and president
   (Names will be provided at a later date.) and one with just Owner information.
5. Architects (The Architecture Alliance Group (TA2G)
6. General Contractor
7. Year Completed

PART THREE - EXECUTION

INSPECTION

Inspect surfaces to verify suitability.

Do not proceed until all conditions are acceptable.

INSTALLATION

Provide all mounting devices for complete installation.

Install all signs at all locations scheduled on Drawings.

Install all signs as per manufacturers recommendations and as indicated on drawings.

END OF SECTION 10425

SECTION 10520 – FIRE EXTINGUISHERS AND ACCESSORIES

PART ONE - GENERAL

DESCRIPTION

Provide and install all fire extinguishers, and accessories (F.E.) as indicated on drawings and specified herein.

Include all clips, supports, screws and mounting brackets for complete installation.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions

SUBMITTALS

Submit manufacturers descriptive brochures and necessary supplemental detailed information indicating quality, finishes and accessories required for complete installation.

PRODUCT DELIVERY, STORAGE, AND HANDLING

Deliver items in manufacturers original unopened protective packaging.

Store materials in original protective packaging to prevent soiling, physical damage or wetting.

Handle so as to prevent damage to finished surfaces.

QUALITY ASSURANCE

Conform to NFPA 10 requirements for portable fire extinguishers.

Provide fire extinguishers, cabinets, and accessories by a single manufacturer.

Conform to UBC 7-5 (ASTM E814-97) & UBC 7-1 (ASTM E119-97) for fire resistive wall performance where necessary.

Conform to American with Disabilities Act 1990 on maximum cabinet projection of 4” in corridors where necessary.

PART TWO - PRODUCTS

MATERIALS

FIRE EXTINGUISHERS IN CABINET: (F.E.C.) Ambassador 1017 series w/ cold rolled steel white powder coated finish semi-recessed with Cosmic 10E fire extinguisher (provide fire extinguisher red lettering and full glass with double strength glass) as manufactured by J. L. Industries. Full glass Architectural series with MP 10 manufactured by Larsen's Manufacturing shall be approved substitute. Complete with all brackets and clips for a complete installation. Verify depth of walls for correct size of cabinets.

FIRE EXTINGUISHERS: (F.E.) Cosmic 10E fire extinguishers with wall bracket as manufactured by J. L. Industries. MP 10 with wall bracket manufactured by Larsen's Manufacturing shall be approved substitute.

Provide fire cabinets & extinguishers for fire-rated walls. Fire-FX options (See Architectural Drawings)

Provide fire extinguishers w/brackets in all mechanical & electrical rooms and other areas that are indicated on drawings. If an extinguisher is not shown in the mechanical and electrical rooms, it is still required to supply them.

PART THREE - EXECUTION

INSPECTION

Inspect surfaces to verify suitability.

Do not proceed until all conditions are acceptable.

INSTALLATION

Mount head of cabinet @ 5'-0" above finish floor.

Prepare recesses in walls for fire extinguisher cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's recommendations.

Securely fasten mounting brackets and fire extinguisher cabinets to structure, square, and plumb, to comply with manufacturer's recommendations.

END OF SECTION 10520

SECTION 10800 - TOILET AND BATH ACCESSORIES

PART ONE - GENERAL

DESCRIPTION

Provide each type toilet and bath accessory shown on drawings and specified herein.

Provide wood blocking in stud walls behind all mounted fixtures.

RELATED WORK SPECIFIED ELSEWHERE

General & Supplementary Conditions, Special Requirements:
Wood Blocking: Section 06100

QUALITY ASSURANCE

Accessories: Products of a single manufacturer, where possible.

SUBMITTALS

Submit manufacturer's descriptive brochures and necessary supplemental detailed information indicating model numbers, quality of materials, location of items, sizes, finishes and anchorage required to install each item.

Maintenance data, operating instructions and keys required for each type of equipment and lock.

PRODUCT DELIVERY, STORAGE & HANDLING

Deliver items in manufacturer's original unopened protective packaging.

Store materials in original protective packaging to prevent soiling, physical damage or wetting.

Handle so as to prevent damage to finished surfaces.

Protection:

1. Maintain protective covers on all units until installation is complete.
2. Remove protective covers at final clean-up of installation.

GUARANTEE

Guarantee all mirrors for 10 years against silver spoilage.

PART TWO - PRODUCTS

MATERIALS

Mirror: Clear laminate float glass with wooden frame. **Allowance $400 per mirror**.

Toilet Tissue Dispenser: Models 5084 as manufactured by Bradley Corp. Approved equal manufacturer by Bobrick or ASI.

Grab Bars: Model 812 as manufactured by Bradley Corp. Approved equal as manufactured by Bobrick (B6106) or ASI (3800).

Paper Towel: Models 2A00 Diplomat Series as manufactured by Bradley Corp. B-or as manufactured by Bobrick or ASI approved equal.

Seat Cover Dispenser: Models 5A40 Diplomat Series as manufactured by Bradley Corp. B-or as manufactured by Bobrick or ASI approved equal.

Mop & Broom Holder: Model 9953 (3 Holders) as manufactured by Bradley Corp. (B223) Bobrick or ASI (8215).

Baby Changing Station: Model KB101 Vertical surface mounted manufactured by Koala Kare (Bobrick) an approved equal.

Robe Hook: Model 9125 as manufactured by Bradley Corp. or B-672 as manufactured by Bobrick or ASI (7345). **Provide @ all toilet stalls mounted to doors.**

Surface Mount Door Bumper: Model 9144 as manufactured by Bradley Corp. or B-6877 as manufactured by Bobrick or ASI (0719). **Provide @ all toilets.**

PART THREE - EXECUTION

INSPECTION

Check openings provided to receive recessed units for correct dimensions, plumbness of blocking or frames, preparation that would affect installation of accessories.

Check areas to receive surface mounted units for conditions that would affect quality and execution of work.

Verify spacing of plumbing fixtures and toilet partitions that affect installation of accessories.

Do not begin installation of washroom accessories until openings and surfaces are acceptable.

INSTALLATION

Drill holes to correct size and application that is concealed by item, with 1/4 in. tolerance.

Mount recessed accessories into wall openings with wood screws through cabinet side into wood blocking, or sheet metal screws into metal frames. All fasteners to be non-ferrous.

Mount surface mounted accessories to back up with fasteners recommended by manufacturer. Exposed fasteners to be of same material and finish as accessory. Adhesive fasteners not acceptable.

ADJUST AND CLEAN

Adjust accessories for proper operation.

After completion of installation, clean and polish all exposed surfaces.

Deliver keys and instruction sheets to Owner.

SCHEDULE OF TOILET AND BATH ACCESSORIES

Use this schedule for all restrooms

Each single occupancy restrooms to have these items: The total is for only one restroom, so count the exact number of restrooms to include all these items.

- (1) Mirror – Provide all every lavatory sink or sink drain.- 1 total
- (1) Paper Towel Dispenser – 1 total
- (1) 36” & 42” Grab bar @ side wall of each water closet (handicapped)
- (1) Single Toilet Tissue Dispenser 1 total
- (1) Seat Cover – Provide at Unisex – 1 total
- (1) Baby Changing – Provide at Unisex – 1 total only 1st floor.

Each Janitor sink to have:

- (1) Mop holder @ each mop sink

END OF SECTION 10800

SECTION 14240 – LOWRISE HYDRAULIC ELEVATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes hydraulic passenger elevators.

B. Related Sections include the following:

1. Division 2 Section "Earthwork" for excavation to accommodate plunger-cylinder assembly.
2. Division 3 Section "Cast-in-Place Concrete" for setting sleeves, inserts, and anchoring devices in concrete.
3. Division 4 Section "Unit Masonry" for setting sleeves, inserts, and anchoring devices in masonry.
4. Division 5 Section "Structural Steel" for the following:

    a. Attachment plates, angle brackets, and other preparation of structural steel for fastening guide-rail brackets.
    b. Divider beams.
    c. Structural-steel shapes for subsills and entrance frames that are part of steel frame.
    d. Hoist beams by General Contractor.

5. Division 5 Section "Metal Fabrications" for the following:

    a. Attachment plates and angle brackets for supporting guide-rail brackets.
    b. Divider beams.
    c. Structural-steel shapes for subsills and entrance frames].
    d. Pit ladders.

6. Division 5 Section "Ornamental Metal" for combination units that contain hall push-button stations.
7. Division 9 Section "Painting" for field painting of hoistway entrances.
8. Division 9 Section 09660 for finish flooring in elevator cars.
9. Division 13 Section "Fire Alarm" for smoke detectors in elevator lobbies to initiate emergency recall operation [and heat detectors in shafts and machine rooms to

disconnect power from elevator equipment before sprinkler activation] and for connection to elevator controllers.

10. Division 13 Section "<Insert Section title>" for security card access equipment used to restrict elevator use.
11. Division 16 Section "Premises Telephone Wiring" for telephone service to elevators.
12. Division 16 Sections for electrical service for elevators to and including [fused] disconnect switches at machine room door [and standby power source, transfer switch, and connection from auxiliary contacts in transfer switch to controller].

1.3 DEFINITIONS

A. Defective Elevator Work: Operation or control system failures; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; the need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.

1.4 SUBMITTALS

A. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information.

B. Shop Drawings: Show plans, elevations, sections, and large-scale details indicating service at each landing, machine room layout, coordination with building structure, relationships with other construction, and locations of equipment and signals. Indicate variations from specified requirements, maximum dynamic and static loads imposed on building structure at points of support, and maximum and average power demands.

C. Samples: For exposed finishes of cars, hoistway doors and frames, and signal equipment; 3-inch- (75-mm-) square samples of sheet materials; and 4-inch (100-mm) lengths of running trim members.

D. Manufacturer Certificates: Signed by elevator manufacturer certifying that hoistway, pit, and machine room layout and dimensions, as shown on Drawings, and electrical service, [including emergency generator as shown and specified, are adequate for elevator system being provided.

E. Maintenance Manuals: Include operation and maintenance instructions, parts listing with sources indicated, recommended parts inventory listing, emergency instructions, and similar information Submit for Owner's information at Project closeout as specified in Division 1.

F. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Regularly engages in manufacturing, installing and servicing elevators of the type specified.
2. Manufactures major elevator components in North America.

B. Installer Qualifications: Elevator manufacturer or an experienced installer approved by elevator manufacturer who has completed elevator installations similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

C. Regulatory Requirements: In addition to local governing regulations, comply with applicable provisions in ASME A17.1, "Safety Code for Elevators and Escalators."

1. Seismic Risk Zone: Project is located in Zone 1.

D. Accessibility Requirements: In addition to local governing regulations, comply with "Americans with Disabilities Act (ADA), Accessibility Guidelines (ADAAG)." [Section 407 in ICC A117.1.]

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials, components and equipment in manufacturer's original protective packaging in a dry protected area.

B. Handle materials in accordance with manufacturer's recommendations to prevent damage, soiling, or deterioration.

1.7 COORDINATION

A. Coordinate installation of sleeves, block outs, and items that are embedded in concrete or masonry for elevator equipment. Furnish templates and installation instructions and deliver to Project site in time for installation.

B. Furnish well casing and coordinate delivery with related excavation work.

C. Coordinate locations and dimensions of other work relating to hydraulic elevators including pit ladders, sumps, and floor drains in pits; entrance subsills; and electrical service, electrical outlets, lights, and switches in pits and machine rooms.

1.8 WARRANTY

A. Special Manufacturer's Warranty: Written warranty, signed by manufacturer agreeing to repair, restore, or replace defective elevator work within specified warranty period.

1. Warranty Period: 12 months from date of Substantial Completion.

1.9 MAINTENANCE SERVICE

A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance service by skilled employees of the elevator Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity. Provide parts and supplies as used in the manufacture and installation of original equipment.

1. Perform maintenance, including emergency callback service, during normal working hours.
2. Include 24-hour-per-day, 7-day-per-week emergency callback service.

   a. Response Time: One hour or less.

B. Continuing Maintenance Proposal: Provide a continuing maintenance proposal from Installer to Owner, in the form of a standard 3 year maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

C. Continuing Maintenance Proposal: Provide a continuing maintenance proposal from Installer to Owner with terms, conditions, and obligations as set forth in, and in the same form as, "Draft of Elevator Maintenance Agreement" at end of this Section, starting on date initial maintenance service is concluded.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The design for hydraulic elevators is based on **Otis Elevator model HydroFit 2100 (Machine-roomless & hole less hydraulic elevator).** Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Otis Elevator Company
2. ThyssenKrupp Elevator

2.2 MATERIALS AND COMPONENTS

A. General: Provide manufacturer's standard elevator systems. Where components are not otherwise indicated, provide standard components, published by manufacturer as included in standard pre-engineered elevator systems and as required for a complete system.

B. Pump Units: Positive-displacement type with a maximum of 10 percent variation between no load and full load and with minimum pulsations. Provide the following:

1. Pump, with fan-cooled squirrel-cage induction motor, mounted under oil tank with vibration isolation mounts. Enclose pump and motor in prime-painted steel enclosure lined with 1-inch- (25-mm-) thick, glass-fiber insulation board.
2. Provide motor with solid-state starting.

C. Hydraulic Silencers: Provide hydraulic silencer containing pulsation-absorbing material in a blowout-proof housing at pump unit.

D. Piping: Provide size, type, and weight piping recommended by manufacturer, and provide flexible connectors to minimize sound and vibration transmissions from power unit.

E. Hydraulic Oil: Provide hydraulic oil of proper grade in the quantity recommended by manufacturer.

1. Provide dielectric couplings between power unit and cylinder units.
2. Casing for Underground Piping: PVC pipe complying with ASTM D 1785 joined with PVC fittings complying with ASTM D 2466 and solvent cement complying with ASTM D 2564.

F. Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for installing guide rails, machinery, and other components of elevator work where installation of devices is specified in another Specification Section.

G. Protective Cylinder Casings: HDPE pipe casings complying with ASME A17.1, of sufficient size to provide not less than 1-inch (25-mm) clearance from cylinder, and extending above pit floor.

H. Car Frame and Platform: Formed or structural steel members, bolted or welded together.

1. For freight elevators, provide special heavy-duty units where indicated for power truck loading, designed to withstand impacts and wheel loadings indicated.

I. Finish Materials: Provide the following materials and finishes for exposed parts of elevator car enclosures, car doors, hoistway entrance doors and frames, and signal equipment as indicated:

1. Polished Stainless Steel: ASTM A 666, Type 304, with No. 8 mirror polished finish.
2. Satin Stainless Steel: ASTM A 666, Type 304, with No. 4, directional satin finish.
3. Textured Stainless Steel: ASTM A 666, Type 304; titanium nitride colored; with texture rolled into exposed surface.

    a. Surface is satin polished after rolling.

4. Polished Bronze Plate and Sheet: ASTM B 36/B 36M, alloy UNS No. C28000 (muntz metal), polished finish, lacquered.
5. Satin Bronze Plate and Sheet: ASTM B 36/B 36M, alloy UNS No. C28000 (muntz metal), directional satin finish, lacquered.
6. Bronze Extrusions: ASTM B 455, alloy UNS No. C38500 (architectural bronze).
7. Nickel Silver Extrusions: ASTM B 151 (ASTM B 151M), alloy UNS No. C74500.
8. Enameled-Steel Sheet: Cold-rolled steel sheet complying with ASTM A 366/A 366M, matte finish, stretcher-leveled standard of flatness; hot-rolled steel sheet complying with ASTM A 569/A 569M may be used for door frames. Provide with factory-applied enamel finish; colors as selected by Architect.
9. Prime-Painted Steel Sheet: Cold-rolled steel sheet, ASTM A 366/A 366M, or hot-rolled steel sheet, ASTM A 569/A 569M, with factory-applied rust-inhibitive primer.
10. Plastic Laminate: High-pressure type complying with NEMA LD 3, Type HGP for postformed applications color, texture, and pattern as selected by Architect from plastic-laminate manufacturer's full range of products.
11. Rolled Steel Floor Plate: ASTM A 786/A 786M.
12. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Pattern 1, alloy 6061-T6.
13. Rolled Stainless-Steel Floor Plate: ASTM A 793.

2.3 OPERATION SYSTEMS

A. Passenger Elevators: Provide manufacturer's standard microprocessor operation system for each elevator or group of elevators as required to provide type of operation system indicated.

    1. Single Elevator, Two Stops: Provide "automatic operation" as defined in ASME A17.1.
    2. Single Elevator: Provide "selective collective automatic operation" as defined in ASME A17.1.
    3. Multiple-Car Group: Provide "group automatic operation" as defined in ASME A17.1.

B. Auxiliary Operations: In addition to primary operation system features, provide the following operational features for elevators where indicated.

    1. Standby Power Operation: On activation of standby power, cars are returned to a field programmable floor, the doors cycled, and the car parked with doorsclosed. The door open button is to remain active to allow passengers to exit the car. Only one car may be moved upward at a time, with priority given to loaded cars. If a car

cannot be returned after two attempts, each of a preselected length of time, it is removed from the system. When all cars have been returned or removed from the system, one car is automatically placed in service. If car selected for service cannot operate within 60 seconds, the system removes that car from service and places another car in service. Cars can be manually put in service on standby power, either for return operation or for regular operation, by switches in control panel located at main lobby. Manual operation causes automatic operation to cease.

2. Standby Powered Lowering: On activation of standby power, cars that are at a floor remain at that floor, cycle their doors, and shut down with the doors closed. Cars that are between floors are lowered to a field programmable floor, cycle their doors, and shut down with the doors closed. Cars that are below the preselected floor are lowered to the next lower floor, cycle their doors, and shut down with the doors closed.
3. Standby Powered Lowering: On activation of standby power, cars are lowered to the lowest floor, cycle their doors, and shut down with the doors closed.
4. Battery-Powered Lowering: If power fails, cars that are at a floor remain at that floor, cycle their doors, and shut down with the doors closed. Cars that are between floors are lowered to a field programmable floor, cycle their doors, and shut down with the doors closed. Cars that are below the field programmable floor are lowered to the next lower floor, cycle their doors, and shut down with the doors closed. System includes rechargeable battery and automatic recharging system.
5. Battery-Powered Lowering: When power fails, cars are lowered to the lowest floor, cycle their doors, and shut down with the doors closed. System includes rechargeable battery and automatic recharging system.
6. Emergency Hospital Service: Service is initiated by a card reader & remote switch at designated floors. One elevator is removed from group operation and directed to the floor where service was initiated. On arriving at the floor, elevator opens its doors and parks and a lighted sign directs passengers to exit elevator. Car is placed in operation by selecting a floor and pressing door close button or by operating keyswitch to put car in independent service. After responding to floor selected or being removed from independent service, car is returned to group operation. If car is not placed in operation within a preset time after being called, it is returned to group operation.
7. Independent Service: Keyswitch in car control station removes car from group operation and allows it to respond only to car calls. Key cannot be removed from keyswitch when car is in independent service. When in independent service, doors close only in response to constant pressure on the door close button.
8. Loaded-Car Bypass: When car load exceeds a predetermined weight, car will respond only to car calls, not to hall calls. Predetermined weight can be adjusted.
9. Automatic Dispatching of Loaded Car: When car load exceeds a predetermined weight, doors will begin closing.
10. Nuisance Call Cancel: When car calls exceed a preset number while car load is less than a predetermined weight, all car calls are canceled. Preset number of calls can be adjusted.

11. Load-Weighing Device (Freight Elevators): When car load exceeds 80 percent of rated capacity, a signal light is lit in the car control station; when car load exceeds rated capacity, car will not respond to car or hall calls.

C. Security Features: In addition to above operational features, provide the following security features, where indicated. Security features shall not affect emergency firefighters' service. The main landing will not be locked out from the car to allow access out of the building to the "security level".

1. Keyswitch Feature: Car and hall push buttons are activated and deactivated by security keyswitches. Key is removable only in deactivated position.
2. Secured Landing Feature: Allows each landing to be secured or cleared. If landing is secured, car buttons for that landing do not register a call unless landing access code is entered within a predetermined time period after landing button is pressed. When a secured landing button is pressed, a "Restricted Floor" lamp lights and remains lit until landing access code has been entered or predetermined time period has elapsed.

    a. User identification and access codes are programmed through a security PC system. Secured landing feature is activated and deactivated by a security keyswitch at the main landing.

3. Car-to-Lobby Feature: Feature, activated by a keyswitch at main lobby, that causes all cars in a group to return immediately to lobby and open doors for inspection. On deactivation by keyswitch, cars complete calls registered before keyswitch activation and resume normal operation.
4. Card-Reader Operation: For access to restricted landings. Provide required conductors in traveling cable and panel in machine room for interconnecting card readers, other security access system equipment, and elevator controllers. Allow space in car as indicated for card reader.

    a. When system is activated, car calls to restricted landings do not register until card is accepted by security access system. Security access system determines which landings are restricted and which of those are accessible to cardholder.
    b. Card readers and other security access system equipment are by others.

2.4 SIGNAL EQUIPMENT

A. General: Provide signal equipment for each elevator or group of elevators with hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled. Fabricate lighted elements of acrylic or other permanent, nonyellowing translucent plastic.

B. Car Control Stations: Provide manufacturer's standard semirecessed car control stations. Mount in return panel adjacent to car door, if not otherwise indicated.

C. Car Control Stations: Provide fully recessed car control stations with applied metal faceplates. Mount in return panel adjacent to car door, if not otherwise indicated.

D. Swing-Return Car Control Stations: Provide car control stations fully recessed in hinged return panel adjacent to car door.

1. Include call buttons for each landing served and other buttons, switches, and controls required for specified car operation.
2. Mark buttons and switches with manufacturer's standard identification for required use or function that complies with ASME A17.1.
3. Mount controls at heights complying with [the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines (ADAAG)."] [ICC A117.1.]
4. Provide two car control stations in each passenger elevator; equip only one with required keyswitches, if any.
5. Where indicated, equip each freight elevator with auxiliary car control station mounted on side of car at height to facilitate operation by forklift truck operator without leaving truck.

E. Emergency Communication System: Provide system that complies with ASME A17.1 and the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines (ADAAG)." On activation, system dials preprogrammed number of monitoring station and identifies elevator location to monitoring station. System provides two-way voice communication without using a handset and provides visible signals that indicate when system has been activated and when monitoring station has responded. System is contained in flush-mounted cabinet, with identification, instructions for use, and battery backup power supply.

F. Fire Department Communication System: Provide [flush-mounted cabinet] in each car and required conductors in traveling cable for fire department communication system specified in Division 16 Sections.

G. Car Position Indicator: For passenger elevator cars, provide illuminated-signal type, digital-display type, or segmented type, located above car door or above car control station. Also provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served.

1. Include travel direction arrows if not provided in car control station.

H. Hall Push-Button Stations: Provide one hall push-button station at each landing for each elevator or group of elevators, but not less than one station for each four elevators in a group. For each group of passenger elevators, locate between two elevators at center of group or at location most convenient for approaching passengers.

I. Hall Push-Button Stations: Provide hall push-button stations at each landing for each elevator or group of elevators as indicated.

1. Provide units with flat faceplate for mounting with body of unit recessed in wall.
2. Provide units with direction-indicating buttons; two buttons at intermediate landings; one button at terminal landings.

J. Hall Lanterns: Provide units with illuminated arrows, but provide single arrow at terminal landings.

1. Provide units with flat faceplate for mounting with body of unit recessed in wall and with illuminated elements projecting from faceplate for ease of angular viewing.
2. Place lanterns either above or beside each hoistway entrance, unless otherwise indicated. Mount at a minimum of 72 inches (1829 mm) above finished floor.
3. Place lanterns in both jambs of entrance frame for each elevator. Mount at a minimum of 72 inches (1829 mm) above finished floor.

   a. At manufacturer's option, for single elevators or for only two cars in a group, lanterns may be located in car doorjambs instead of entrance jambs.

4. With each lantern, provide audible signals indicating car arrival and direction of travel. Signals sound once for up and twice for down.

   a. At manufacturer's option, audible signals may be placed on each car.

K. Hall Position Indicators: Provide illuminated-signal type or digital-display type, located above each hoistway entrance at ground floor. Provide units with flat faceplate for mounting with body of unit recessed in wall.

1. Integrate ground-floor hall lanterns with hall position indicators.

2.5 DOOR REOPENING DEVICES

A. Infrared Array: Provide door reopening devices with a uniform array of ~~36~~40 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more of the light beams shall cause doors to stop and reopen.

1. Nudging Feature: After car doors are prevented from closing for a predetermined adjustable time, through activating door reopening device, a loud buzzer shall sound. When the doors are released, the ~~and~~ doors shall begin to close at reduced kinetic energy.

2.6 PASSENGER ELEVATOR CAR ENCLOSURES

A. General: Provide manufacturer's standard [steel-framed car enclosures with nonremovable wall panels], suspended ceiling, trim, accessories, access doors, doors, power door operators, sills (thresholds), lighting, and ventilation.

1. Floor finish is specified in another Section.
2. Metal Wall Panels: Flush hollow-metal construction, fabricated from metal indicated.
3. Plastic-Laminate Wall Panels: Plastic laminate adhesively applied to 1/2-inch (13-mm) fire-retardant-treated particleboard with [plastic-laminate panel backing complying with NEMA LD 3, Type BKV and] manufacturer's standard protective edge trim. Panels have a flame-spread rating of [25] [75] or less, when tested according to ASTM E 84.
4. Fabricate car with recesses and cutouts for signal equipment.
5. Fabricate car door frame integrally with front wall of car.
6. Enameled-Steel Doors: Flush, hollow-metal construction.
7. Stainless-Steel Doors: Flush, hollow-metal construction, fabricated from stainless steel.
8. Textured Stainless-Steel Doors: Flush, hollow-metal, prime-painted-steel doors, faced with textured stainless-steel sheets. Laminate textured stainless steel to exposed faces and edges using adhesive that fully bonds metal to metal without telegraphing or oil-canning.
9. Bronze Doors: Flush, hollow-metal, prime-painted-steel doors, faced with bronze sheets. Laminate bronze to exposed faces and edges using adhesive that fully bonds metal to metal without telegraphing or oil-canning.
10. Plastic-Laminate Doors: Flush, hollow-metal, prime-painted-steel doors, faced with plastic laminate; with manufacturer's standard protective edge trim.
11. Sills:
    a. Extruded metal, of grooveless type with door(s) guided from below; 1/4 inch (6.4 mm) thick. Provide satin finish on [aluminum].
    b. Sill-less construction, with flooring material extending up to the edge of the car platform without a visible sill component. Door(s) will be guided from below.
    c. Extruded metal, with groove(s) in top surface, 1/4 inch (6.4 mm) thick. Provide satin finish on [aluminum].
12. Luminous Ceiling: Fluorescent light fixtures and ceiling panels of translucent acrylic or other permanent rigid plastic complying with flammability requirements.
13. Polished Metal Ceiling: Flush panels, of metal indicated, with low-voltage downlights in each panel.
14. Handrails: Manufacturer's standard handrails, of metal indicated.

2.7 PASSENGER HOISTWAY ENTRANCES

A. General: Provide manufacturer's standard horizontal-sliding, door-and-frame hoistway entrances complete with track systems, hardware, sills, and accessories. Provide frame size and profile to coordinate with hoistway wall construction.

1. Where gypsum board wall construction is indicated, provide self-supporting frames with reinforced head sections.

B. Materials and Fabrication: Provide manufacturer's standards but not less than the following:

1. Enameled-Steel Frames: Formed steel sheet.
2. Stainless-Steel Frames: Formed stainless-steel sheet.
3. Bronze Frames: Prime-painted, formed-steel frames faced with formed-bronze sheet. Laminate bronze to steel frames using adhesive that fully bonds metal to metal without telegraphing or oil-canning.
4. Enameled-Steel Doors [and Transoms]: Flush, hollow-metal construction.
5. Stainless-Steel Doors [and Transoms]: Flush, hollow-metal construction, fabricated from stainless steel.
6. Textured Stainless-Steel Doors [and Transoms]: Flush, prime-painted-steel, hollow-metal construction, faced with textured stainless-steel sheets. Laminate textured stainless steel to exposed faces and edges using adhesive that fully bonds metal to metal without telegraphing or oil-canning.
7. Bronze Doors [and Transoms]: Flush, prime-painted-steel, hollow-metal construction, faced with bronze sheets. Laminate bronze to exposed faces and edges using adhesive that fully bonds metal to metal without telegraphing or oil-canning.
8. Plastic-Laminate Doors [and Transoms]: Flush, prime-painted-steel, hollow-metal construction, faced with plastic laminate; with manufacturer's standard protective edge trim.
9. Sills:
   a. Extruded metal, of grooveless type with door(s) guided from below; 1/4 inch (6.4 mm) thick. Provide satin finish on [aluminum], [bronze] [and] [nickel silver].
   b. Sill-less construction, with flooring material extending up to the edge of the running clearance without a visible sill component. Door(s) will be guided from below.
   c. Extruded metal , with groove(s) in top surface, 1/4 inch (6.4 mm) thick. Provide satin finish on [aluminum.
10. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.

2.8 PASSENGER ELEVATORS

A. Elevator Nos.: 1 & 2

1. Type: Under-the-car single cylinder.
2. Rated Load: 5000 lb (2270 kg
3. Rated Speed: 125 fpm (0.64 m/s)] First subparagraph below can be deleted if only one operation system was retained in first paragraph of "Operation Systems" Article in Part 2.
4. Operation System: Two car group operation

5. Auxiliary Operations:

   a. Standby power operation.
   b. Standby power~~ed~~ lowering.
   c. Battery-powered lowering.
   d. Emergency hospital service
   e. Independent service.
   f. Loaded-car bypass.
   g. Automatic dispatching of loaded car.
   h. Nuisance call cancel.

6. Security Features: Card-reader operation.
7. Car Enclosures: As follows:
   a. Ceiling: Luminous ceiling
   b. Handrails: Polished stainless steel at side and rear walls.
   c. Floor prepared to receive resilient tile.

8. Hoistway Entrances: As follows:

   a. Width: 48 inches (1219 mm)].
   b. Height: 96 inches (2438 mm)].
   c. Type: Two-speed side sliding.
   d. Frames at First Floor:Polished stainless stee] Copy and edit subparagraph below as necessary. Plastic-laminate doors are about as expensive as stainless steel but are not as durable.
   e. Doors and Transoms at First Floor: Polished stainless steel.
   f. Sills at First Floor: Aluminum .

9. Hall Fixtures at First Floor and at Other Floors: Satin stainless steel.
10. Additional Requirements: As follows:

    a. Provide inspection certificate in each car, mounted under acrylic cover with [polished stainless-steel] [frame.
    b. Provide protective blanket hooks in all cars and two complete sets of full-height blankets.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine elevator areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance. Verify critical dimensions, and examine supporting structure and other conditions under which elevator work is to be installed. Proceed with installation only after unsatisfactory conditions have been corrected.

1. For the record, prepare a written report, endorsed by Installer, listing dimensional discrepancies and conditions detrimental to performance.

3.2 INSTALLATION

A. Excavation for Jack: Drill excavation in each elevator pit to accommodate installation of cylinders; comply with applicable requirements in Division 2 Section "Earthwork."

   1. Provide [waterproof] well casings [as necessary] to retain walls of well hole.

B. Install cylinders in well [hole or] casings. Before installing cylinders, remove water and debris from well [hole or] casing [and provide permanent waterproof seal at bottom of casing]. [Align cylinder and fill void space with fine sand.]

C. Install cylinders plumb and accurately centered for elevator car position and travel. Anchor securely in place, supported at pit floor. Seal between [well casing] [protective casing] [cylinder] and pit floor with 4 inches (100 mm) of nonshrink, nonmetallic grout.

D. Welded Construction: Provide welded connections for installing elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualifications of welding operators.

E. Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts designed to effectively prevent transmission of vibrations to structure and thereby eliminate sources of structure-borne noise from elevator system.

F. Install piping above the floor, where possible. Where not possible, install underground piping in Schedule 40 PVC pipe casing assembled with solvent-cement fittings.

G. Install piping above the floor, where possible. Where not possible, cover underground piping with permanent protective wrapping before backfilling.

H. Lubricate operating parts of systems as recommended by manufacturers.

I. Alignment: Coordinate installation of hoistway entrances with installation of elevator guide rails for accurate alignment of entrances with cars. Where possible, delay installation of sills and frames until car is operable in shaft. Reduce clearances to minimum, safe, workable dimension at each landing.

J. Leveling Tolerance: 1/4 inch (6 mm), up or down, regardless of load and direction of travel.

K. Set sills flush with finished floor surface at landing. Fill space under sill solidly with nonshrink, nonmetallic grout.

3.3 FIELD QUALITY CONTROL

A. Acceptance Testing: On completion of elevator installation and before permitting use (either temporary or permanent) of elevators, perform acceptance tests as required and recommended by ASME A17.1 and by governing regulations and agencies.

B. Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times tests are to be performed on elevators.

3.4 ADJUSTING

A. Make necessary adjustments of operating devices and equipment to ensure elevator operates safely, accurately, and smoothly.

3.5 DEMONSTRATION

A. Instruct Owner's personnel in proper use, operations, and daily maintenance of elevators. Review emergency provisions, including emergency access and procedures to be followed at time of operational failure and other building emergencies. Train Owner's personnel in procedures to follow in identifying sources of operational failures or malfunctions. Confer with Owner on requirements for a complete elevator maintenance program.

B. Make a final check of each elevator operation with Owner's personnel present and before date of Substantial Completion. Determine that operation systems and devices are functioning properly.

3.6 PROTECTION

A. Temporary Use: Do not use elevators for construction purposes unless cars are provided with temporary enclosures, either within finished cars or in place of finished cars, to protect finishes from damage.

1. Provide full maintenance service by skilled, competent employees of elevator Installer for elevators used for construction purposes. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity. Use same parts and supplies as used in the manufacture and installation of original equipment.
2. Provide protective coverings, barriers, devices, signs, and other procedures to protect elevators. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so that no evidence remains of correction work. Return items that cannot be refinished in the field to the shop, make required repairs and refinish entire unit, or provide new units as required.

END OF SECTION 14240