

SPECIFICATIONS AND CONTRACT DOCUMENTS
FOR

ACCESSIBLE LIFT AND
STAIR REHABILITATION AT CITY HALL

FOR THE CITY OF SULLIVAN
SULLIVAN, MISSOURI



PROJECT # 13006

DATE: March - 2016

CITY ENGINEERING DEPARTMENT
573-468-8965

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ADVERTISEMENT FOR BIDS

Notice is hereby given that the City of Sullivan, Missouri, the Owner, will receive sealed Bids at the office of the City Clerk, 210 West Washington, Sullivan, MO 63080 until 2:00 p.m. local time on Wednesday, March 30, 2016, at which time Bids will be publicly opened and read aloud for the following Project #13006: **Accessible Lift and Stair Rehabilitation at City Hall.**

The Work generally consists of removal of existing hand rails old ramp and modifications to existing stairs. The Work will also include installation of new vertical lift to include concrete pad, approach sidewalk, and concrete screen wall. Various existing and new concrete surfaces will require stone veneer and colorized salt resistant coatings. All work shall meet current ADA standards.

Bids will be received for a single prime Contract as indicated in the Bid Form.

The Issuing Office for the Bidding Documents is the City of Sullivan Engineering Department, (573) 468-8965, located at 210 West Washington, Sullivan, MO 63080. Printed copies of the Bidding Documents may be obtained from the Issuing Office Monday-Friday, 8:00 a.m.-5:00 p.m..

A pre-Bid conference will be held at the City Hall Engineering Conference Room, 210 West Washington, Sullivan, MO 63080 on Monday, March 21, 2016, at 10:00 a.m. local time. Attendance at the pre-bid conference is **mandatory**.

Bid security shall be furnished in accordance with the Instructions to Bidders.

The Contract, if awarded, will be subject to Missouri requirements concerning prevailing wage rates, periods of excessive unemployment, safety training, work authorization, and domestic products, among other requirements.

Questions should be directed to the Owner at (573) 468-8965 or to the Engineer at (573) 468-8965.

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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.

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

2.03 Owner and Engineer, when transmitting Bidding Documents in electronic media or digital format, make no representations as to compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols. Files in electronic media format are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic or digital versions of the Bidding Documents (including any printed copies derived from such electronic or digital versions) and the printed version issued by the Issuing Office, the printed version issued by the Issuing Office shall govern.

2.04 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and shall be prepared to submit the following additional information within five days of Owner's request:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Bidder's state or other contractor license number, if applicable.

C. Subcontractor and Supplier qualification information.

D. Other required information regarding qualifications.

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02 *Existing Site Conditions*

- A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
1. The Supplementary Conditions identify:
 - a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
 - b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
 2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
 3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

- C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER’S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and

- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

- 6.01 A pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (5%) of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 12.03 Bidder shall submit with its Bid a list of the Subcontractors or Suppliers proposed for major portions of the Work using the form provided in the Bidding Documents. If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder’s Bid price will be increased or decreased by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

12.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”

13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.

13.03 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

13.04 A Bid by an individual shall show the Bidder’s name and official address.

13.05 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

13.06 All names shall be printed in ink below the signatures.

13.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.08 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

13.09 The Bid shall contain evidence of Bidder’s authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder’s state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID

14.01 *Base Bid with Alternates*

- A. Bidders shall submit a Bid on a lump sum basis for the base Bid and include a separate price for each alternate described in the Bidding Documents and as provided for in the Bid Form. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.
- B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form.

14.02 *Unit Price*

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The “Bid Price” (sometimes referred to as the extended price) for each unit price Bid item will be the product of the “Estimated Quantity” (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding “Bid Unit Price” offered by the Bidder. The total of all unit price Bid items will be the sum of these “Bid Prices”; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.” A mailed Bid shall be addressed to: City Clerk, 210 West Washington, Sullivan, MO 63080.
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 19.03 Evaluation of Bids
- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.

19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner’s requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 22 – SALES AND USE TAXES

22.01 Owner is exempt from Missouri state sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Bid. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information.

ARTICLE 23 – PREVAILING WAGE RATES

23.01

ARTICLE 24 – PERIODS OF EXCESSIVE UNEMPLOYMENT

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ARTICLE 25 – SAFETY TRAINING

25.01

ARTICLE 26 – WORK AUTHORIZATION

26.01

ARTICLE 27 – MISSOURI DOMESTIC PRODUCTS

27.0

Project Identification: Accessible Lift and Stair Rehabilitation at City Hall.
City of Sullivan, Missouri

Bidder Name: _____

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

City of Sullivan, Missouri, 210 West Washington, Sullivan, MO 63080

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to

existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Lump Sum Bid Price for Demolition of Ramp	\$
Lump Sum Bid Price for Demolition of Stairs/Slab/Handrails	\$
Lump Sum Bid Price Clearing and Grubbing	\$
Lump Sum Bid Price for Grading, Seeding & Mulch	\$
Lump Sum Bid Price for color coating and sealing all exposed non veneered concrete against salt, etc. 4" sidewalk not included.	\$

Total of All Lump Sums \$ _____

[and/or]

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1	4" Sidewalk	SF	245		
2	6" Sidewalk	SF	200		
3	Vertical Lift Screen Wall	LF	8		
4	Stone Veneer	SF	175		
5	12" Cap Stone	LF	65		
6	Stair Retaining Wall Extensions	LF	20		
7	Stair Replacement	CY	3		
8	ADA Compliant Handrail (Powder Coated Aluminum - Black)	LF	60		
Alt #1-1	Retaining Wall to Replace Block Wall West of Stairs (Including Removal of Existing Block Wall)	LF	24		
Alt #1-2	Stone Veneer	SF	35		
Alt #1 - 3	12" Cap Stone	LF	24		
Total of All Unit Price Bid Items					\$

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Total of Lump Sum and Unit Price Bids = Total Bid Price \$ _____

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security
 - B. List of Major Subcontractors
 - C. List of Major Equipment Manufacturers
 - D. Required Bidder Qualification Statement with supporting data
 - E. Domestic Products Procurement Act form
 - F. Work Authorization form with supporting data.

ARTICLE 8 – DEFINED TERMS

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____
(where applicable)

DOCUMENT 00 43 00 – BID FORM SUPPLEMENTS

THE FOLLOWING DOCUMENTS ARE TO BE SUBMITTED WITH THE BID FORM:

- A. Bid Bond (2 pages)
(The surety's standard form with a certified copy of the Power of Attorney may be substituted)
- B. List of Major Subcontractors (1 page)
- C. List of Major Equipment Manufacturers (1 page)
- D. Statement of Bidder's Qualifications (1 page)
- E. Domestic Products Procurement Act form (1 page)
- F. Work Authorization form (6 pages)

Note: The above forms may require additional pages of supporting data to be submitted with them.

END OF DOCUMENT 00 43 00

LIST OF MAJOR SUBCONTRACTORS

The names of Subcontractors to be used for the Work shall be entered in the spaces provided below. Upon award of a contract, the named Subcontractors shall be used. The completed List of Major Subcontractors shall become a part of the Contract Documents.

Substitution of Subcontractors shall be as outlined by the provisions of the General Conditions. Substitutions shall be subject to concurrence of the Owner and shall be confirmed by Change Order.

Failure to furnish all information requested in the listing may be cause for rejection of the Bid.

Area of Work	Name of Subcontractor

LIST OF MAJOR EQUIPMENT MANUFACTURERS

The names of Equipment Manufacturers to be used for the Work shall be entered in the spaces provided below. Upon award of a contract, the named Manufacturers shall be used. The completed List of Major Equipment Manufacturers shall become a part of the Contract Documents.

Preliminary acceptance of Equipment Manufacturers name shall not in any way constitute a waiver of the specifications covering such equipment; final acceptance will be based on full conformity with the Contract Documents.

Equipment substitutions will be permitted only if named manufacturer does not meet the requirements of the Contract Documents; is unable to meet the delivery requirements of the construction schedule; is dilatory in complying with the requirements of the Contract Documents; or for other reason specified in the General Conditions. Substitutions shall be subject to concurrence of the Owner and shall be confirmed by Change Order.

Failure to furnish all information requested in the listing may be cause for rejection of the Bid.

Equipment Item	Specification Section	Name of Manufacturer

STATEMENT OF BIDDER'S QUALIFICATIONS

Each Bidder for the Work included in the Contract Documents shall submit with their Bid the data requested in the following schedule of information. This data must be included in and made a part of each Bid and be contained in the sealed envelope. Failure to comply with this instruction may be regarded as justification for rejection of the Bid.

(1) NAME OF BIDDER: _____

(2) BUSINESS ADDRESS: _____

(3) WHEN ORGANIZED: _____ (4) WHERE INCORPORATED: _____

(5) IF NOT INCORPORATED, STATE TYPE OF BUSINESS AND PROVIDE YOUR FEDERAL TAX IDENTIFICATION NUMBER: _____

(6) Number of years engaged in contracting business under present firm name: _____

(7) If you have done business as a different name, give name and location: _____

(8) Have you ever failed to complete any work awarded to your company? If, so, where and why?

(9) Have you ever defaulted on a Contract? _____

(10) Provide a list of a minimum of three (3) similar contracts completed within the last five (5) years of equal or greater value, including description and value of each (attach additional sheet if necessary):

(11) List of projects currently in progress (attach additional sheet if necessary):

EXHIBIT A

THIS FORM MUST BE COMPLETED AND ENCLOSED WITH THE BID

**FRANKLIN COUNTY
DOMESTIC PRODUCTS PROCUREMENT ACT (BUY AMERICAN)**

The Missouri Domestic Products Procurement Act (34.350-34.359 RSMo) requires that for all bids with a value of \$25,000 or more, the goods or commodities purchased by any public agency (which definition includes all political subdivisions of the State, including counties) or used or supplied in the construction, alteration, repair, or maintenance of any public works must be **manufactured or produced** in the United States. As defined in 34.350 RSMo, United States means the United States of America, the District of Columbia, and all territories and possessions subject to the jurisdiction of the United States. The law also requires that the bidder must provide proof of compliance. **Note: In general, if an import tariff is applied to an item, it does not qualify for the Buy American preference. In addition, Most Favored Nation status does not allow application of the preference.**

Section A – All Products Are Manufactured or Produced in U.S.

If all products bid qualify as domestic products under Missouri law, complete only Section A.

I hereby certify that all products qualify as domestic, that the information provided is true and correct, and complies with all provisions of Sections 34.350-34.359 RSMo. I understand that any misrepresentation herein constitutes the commission of a class A misdemeanor pursuant to Section 34.355 of the Revised Statutes of Missouri.
SIGNATURE
COMPANY NAME

If Section A is completed, do not complete Section B.

Section B – Only One Product Line or No Products Are Manufactured or Produced in U.S.

If only one product line or no products are manufactured or produced in the U.S. complete only section B.

I hereby certify that there is only one product line or no product manufactured or produced in the U.S., that the information provided is true and correct, and complies with all provisions of Sections 34.350-34.359 RSMo. I understand that any misrepresentation herein constitutes the commission of a class A misdemeanor pursuant to Section 34.355 of the Revised Statutes of Missouri.
SIGNATURE
COMPANY NAME

Section C – Products May Qualify Because of Qualifying Treaty

If some or all products bid qualify for domestic status because of a trade treaty, etc., then the bidder must identify each product, country and qualifying treaty, etc. below. The bidder must list ALL products which are or may qualify as domestic below. If more space is needed, please copy this form and submit as an attachment.

BID ITEM NUMBER(S)	COUNTRY WHERE MANUFACTURED OR PRODUCED	QUALIFYING TREATY, LAW, AGREEMENT, OR REGULATION
SECTION C		
I hereby certify that the specific items listed above are domestic, that the information provided is true and correct, and complies with all provisions of Sections 34.350-34.359 RSMo. I understand that any misrepresentation herein constitutes the commission of a class A misdemeanor pursuant to Section 34.355 of the Revised Statutes of Missouri.		
SIGNATURE		
COMPANY NAME		

NOTICE AND INSTRUCTIONS TO BIDDERS/VENDORS
REGARDING §§ 285.525 THROUGH 285.550 RSMO, EFFECTIVE JANUARY 1, 2009

Effective January 1, 2009 and pursuant to Missouri Revised Statute Section 285.530(1), “No business entity or employer shall knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri.”

As a condition for the award of any contract or grant in excess of five thousand dollars (\$5,000) by the state or by any political subdivision of the state (e.g. City of Sullivan, MO) to a business entity, the business entity (Company) shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. Every such business entity shall sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services. Section 285.530 (2) RSMo.

“Business Entity” is defined as:

...[A]ny person or group of persons performing or engaging in any activity, enterprise, profession, or occupation for gain, benefit, advantage, or livelihood. The term “business entity” shall include but not be limited to self-employed individuals, partnerships, corporations, contractors, and subcontractors. The term “business entity” shall include any business entity that possesses a business permit, license, or tax certificate issued by the state, any business entity that is exempt by law from obtaining such a business permit, and any business entity that is operating unlawfully without such a business permit. The term “business entity” shall not include a self-employed individual with no employees or entities utilizing the services of direct sellers as defined in subdivision (17) of subsection 12 of section 288.034 RSMo. See, Sec. 285.525 RSMo

Contractor Signature

Date

The City of Sullivan, Missouri, in order to comply with Sections 285.525 through 285.550 RSMo, has instituted the following procedure:

Required Affidavit for Contracts Over \$5,000 (US) – Effective January 1, 2009, business entities desiring to contract with the City for the provision of service shall comply with the provisions of Section 285.525 through 285.550 RSMo. Contract award is contingent upon Company providing an acceptable notarized affidavit stating:

1. that Company is enrolled in and participates in a federal work authorization program with respect to the employees working in connection with the contracted services; and
2. that Company does not knowingly employ any person who is an unauthorized alien in connection with the contracted services.

A sample affidavit is attached.

Additionally, Company must provide documentation evidencing current enrollment in a federal work authorization program (e.g. electronic signature page from E-Verify program's Memorandum of Understanding (MOU)).

The City of Sullivan encourages companies that are not already enrolled and participating in a federal work authorization program to do so. E-Verify is an example of this type of program. Information regarding E-Verify is available at <http://www.dhs.gov/e-verify> or by calling 888-464-4218.

If you have any questions, please contact the Engineering Department at the City of Sullivan at 573-468-8965.

Contractor Signature

Date

STATE OF MISSOURI)

)ss

COUNTY OF FRANKLIN)

AFFIDAVIT

(as required by Section 285.530, Revised Statutes of Missouri)

As used in this Affidavit, the following terms shall have the following meanings:

EMPLOYEE:

Any person performing work or service of any kind or character for hire within the State of Missouri.

FEDERAL WORK AUTHORIZATION PROGRAM:

Any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or an equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, under the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603.

KNOWINGLY:

A person acts knowingly or with knowledge,

(a) with respect to the person’s conduct or to attendant circumstances when the person is aware of the nature of the person’s conduct or that those circumstances exist; or

(b) with respect to a result of the person’s conduct when the person is aware that the person’s conduct is practically certain to cause that result.

Contractor Signature

Date

UNAUTHORIZED ALIEN:

An alien who does not have the legal right or authorization under federal law to work in the United States, as defined in 8 U.S.C. 1324a(h)(3).

BEFORE ME, the undersigned authority, personally appeared

_____, who, being duly sworn, states on his oath or affirmation as

follows:

1. My name is _____ and I am currently the President of _____ (hereinafter "Contractor"), whose business address is _____, and I am authorized to make this Affidavit.
2. I am of sound mind and capable of making this Affidavit, and am personally acquainted with the facts stated herein.
3. Contractor is enrolled in and participates in a federal work authorization program with respect to the employees working in connection with the following services contracted between Contractor and _____

4. Contractor does not knowingly employ any person who is an unauthorized alien in connection with the contracted services set forth above.

Contractor Signature

Date

5. Attached hereto is documentation affirming Contractor's enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services.

Further, Affiant saith not.

Printed Name, Affiant

Subscribed and sworn to before me this _____ day of _____, 2015.

Notary Public
My Commission Expires: State of Missouri
Commissioned in _____ County

PLEASE NOTE:

Acceptable enrollment and participation documentation consists of the E-Verify Memorandum of Understanding:

1. A valid, completed copy of the first page identifying the Contractor; and
2. A valid copy of the signature page completed and signed by the Contractor, and the Department of Homeland Security - Verification Division.

Contractor Signature

Date

DOCUMENT 00 52 13 – AGREEMENT

THIS AGREEMENT is by and between City of Sullivan, Missouri (“Owner”) and _____ (“Contractor”).
Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:
- A. Removal of existing handrails, old ramp, and modifications to existing stairs. The Work also includes installation of new vertical lift to include concrete pad, approach sidewalk, and concrete screen wall. Various existing and new concrete surfaces will require stone veneer and colorized salt resistant coatings. All work shall meet current ADA Standards.

ARTICLE 2 – THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:
- A. Removal of existing hand rails and ramp. Installation of vertical lift, rehabilitation of existing stairs and coating all exposed concrete with a colored salt resistant coating. The stairs and handrails will be replaced first to maintain access to the building. The existing ramp will be demolished and vertical lift installed after completion of stair rehabilitation.

ARTICLE 3 – ENGINEER

- 3.01 The Project has been designed by City of Sullivan Engineering Department.
- 3.02 The Owner assumes all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

- 4.01 *Time of the Essence*
- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- 4.02 *Contract Times: Days*
- A. The Work will be substantially completed within **45** days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within **60** days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. Substantial Completion: Contractor shall pay Owner **\$250.00** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner **\$500.00** for each day that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work other than Unit Price Work, a lump sum of: \$_____.

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

- B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

Unit Price Work					
Item No.	Description	Unit	Estimated Quantity	Unit Price	Extended Price
1	4" Sidewalk	SF	245		
2	6" Sidewalk	SF	200		
3	Vertical Lift Screen Wall	LF	8		
4	Stone Veneer	SF	175		

5	12" Cap Stone	LF	65		
6	Stair Retaining Wall Extensions	LF	20		
7	Stair Replacement	CY	3		
8	ADA Compliant Handrail (Powder Coated Aluminum - Black)	LF	60		
Alt #1-1	Retaining Wall to Replace Block Wall West of Stairs (Including Removal of Existing Block Wall)	LF	24		
Alt #1-2	Stone Veneer	SF	35		
Alt #1-3	12" Cap Stone	LF	24		
Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities)					\$

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

- C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) \$_____.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the **22nd** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously

made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

- a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of 0 percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Contractor has considered the information known to Contractor itself; information commonly

known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 33 to 40, inclusive).
 - 2. Performance bond (pages 1 to 3, inclusive).
 - 3. Payment bond (pages 1 to 3, inclusive).
 - 4. General Conditions (pages 1 to 65, inclusive).
 - 5. Supplementary Conditions (pages 44 to 51, inclusive).
 - 6. Specifications as listed in the table of contents of the Project Manual.
 - 7. Drawings (not attached but incorporated by reference) consisting of **2** sheets with each sheet bearing the following general title: City Hall Accessible Platform and Sidewalk Construction; City of Sullivan, Missouri.
 - 8. Addenda (numbers ___ to ___, inclusive).

9. Exhibits to this Agreement (enumerated as follows):
 - a. List of Major Subcontractors.
 - b. List of Major Equipment Manufacturers.
 - c. Documentation submitted by Contractor prior to Notice of Award.
10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

(Continued on next page)

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

City of Sullivan, Missouri _____

By: _____ By: _____

Title: _____ Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____ Attest: _____

Title: _____ Title: _____

Address for giving notices: 210 West Washington _____

Sullivan, Missouri 63080 _____

ATTN: Robert Schaffer _____

License No.: _____
(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

END OF DOCUMENT 00 52 13

SECTION 00 61 00 – BOND FORMS

PART 1 - GENERAL

1.1 PERFORMANCE AND PAYMENT BONDS

- A. Provide Construction Performance and Payment Bonds using Standard EJCDC Forms Nos. C- 610 and C-615 on the following pages.

END OF DOCUMENT 00 61 00

SECTION 00 62 00 – CONSTRUCTION FORMS

INDEX

<u>Form</u>	<u>Description</u>
--	Shop Drawing Submittal
Form 5060	Missouri Department of Revenue - Project Exemption Certificate
EJCDC No. C-620	Contractor's Application for Payment
EJCDC No. C-940	Work Change Directive
EJCDC No. C-941	Change Order
EJCDC No. C-942	Field Order
EJCDC No. C-625	Certificate of Substantial Completion
--	Affidavit of Waiver of Liens
PW-4	Division of Labor Standards - Affidavit Compliance with the Prevailing Wage Law

END OF DOCUMENT 00 62 00

SHOP DRAWING SUBMITTAL NO. _____

PROJECT # 13006
City of Sullivan, MO
Accessible Lift and Stair Rehabilitation at City Hall

CONTRACTOR: _____

Attn. _____

ENGINEER: Engineering Department - City of Sullivan
210 W. Washington
Sullivan, MO 63080
Attn. Robert J. Schaffer, PE, CFM

SUPPLIER: _____

Attn. _____

- | | |
|--|---|
| <input type="checkbox"/> 1. APPROVED | <input type="checkbox"/> 6. MAKE CORRECTIONS NOTED |
| <input type="checkbox"/> 2. APPROVED AS NOTED | <input type="checkbox"/> 7. RESUBMIT |
| <input type="checkbox"/> 3. NOT APPROVED | <input type="checkbox"/> 8. DO NOT RESUBMIT |
| <input type="checkbox"/> 4. WORK MAY PROCEED | <input type="checkbox"/> 9. SUBMIT FINAL CERTIFIED |
| <input type="checkbox"/> 5. DO NOT PROCEED WITH WORK | <input type="checkbox"/> 10. REVIEW NOT REQUIRED
BY CONTRACT DOCUMENTS |

SEE TRANSMITTAL FOR ADDITIONAL INFORMATION AS APPLICABLE.

ACTION SHOWN ABOVE IS ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE WORK AND WITH THE INFORMATION IN THE CONTRACT DOCUMENTS.

BY APPROVAL AND SUBMISSION, CONTRACTOR REPRESENTS THAT HE HAS DETERMINED AND VERIFIED MATERIALS, FIELD MEASUREMENTS AND CONSTRUCTION CRITERIA SPECIFIED PERFORMANCE AND DESIGN CRITERIA AND SIMILAR DATA.

DEVIATIONS FROM CONTRACT DOCUMENTS ARE NOT REVIEWED UNLESS SPECIFICALLY REQUESTED IN WRITING BY CONTRACTOR. REVIEW ON RESUBMISSION WILL COVER ONLY DESIGNATED CHANGES ON THIS SUBMITTAL AND OTHER CHANGES CLEARLY IDENTIFIED BY CONTRACTOR WITH AN ENCIRCLEMENT.

REVIEWED BY _____ DATE _____

Number of Copies Sent: _____

Date Submitted: _____

Specification Section(s): _____

Plan Sheet(s): _____

Description: _____

Location: _____

Note: _____

Contractor's Approval:

By his/her signature below, the Contractor certifies that he/she has reviewed, checked, and approved the Shop Drawings and that they are in conformance with the requirements of the Contract Documents.

Contractor Approval by: _____ Date: _____

Engineer's Review:

The Engineer will indicate that he/she has reviewed the Shop Drawings by his/her Shop Drawings Review Stamp above or in an attachment and his/her signature thereon.

**AFFIDAVIT
WAIVER OF LIENS**

STATE OF MISSOURI)
) ss.
COUNTY OF)

I, _____ having first been duly sworn, do now
depose and say:

That I am the General Contractor in the construction or repair of improvements upon real estate
owned by _____, and described as
follows: _____

That the persons, firms, and corporations who have executed the attached Waiver of Liens are all
of the persons, firms, and corporations who have furnished services, labor, or materials in the
construction or repair of improvements on the real estate described above, and that as of the date of
the Affidavit such work has been fully completed and accepted by the Owner of said real estate.

(SEAL)

General Contractor

Signature

Subscribed and sworn to me this _____ day of _____, 20____ .

My commission expires 20 .

Notary Public

DOCUMENT 00 72 00 - GENERAL CONDITIONS

PART 1 - GENERAL

1.1 STANDARD DOCUMENT

- A. The Engineers Joint Contract Documents Committee, EJCDC Document C-700, 2013 Edition, entitled "Standard General Conditions of the Construction Contract" that follows shall govern all work of this Contract, except as modified by Section 00 73 00, Supplementary Conditions, and other specific provisions of the Contract Documents.

1.2 MODIFICATIONS

- A. An article or portion of an article not modified by the Supplementary Conditions shall remain in full force and effect.

END OF SECTION 00 72 00

DOCUMENT 00 73 00 - SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

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ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Subsurface and Physical Conditions

SC-5.03 Delete Paragraph 5.03.B in its entirety and insert the following:

- A. No reports or drawings related to Subsurface and Physical Conditions at the Site are known to Owner.

SC-5.06 Hazardous Environmental Conditions

SC-5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.03 Contractor’s Liability Insurance

SC-6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

- 1. Workers’ Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State: Statutory

Federal, if applicable (e.g., Longshoreman’s): Statutory

Jones Act coverage, if applicable: **N/A**

Bodily injury by accident, each accident \$

Bodily injury by disease, aggregate \$

Employer’s Liability:

Bodily injury, each accident \$ Statutory

Bodily injury by disease, each employee \$ Statutory

Bodily injury/disease aggregate \$ Statutory

For work performed in monopolistic states, stopgap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of: \$ N/A

Foreign voluntary worker compensation Statutory

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate	\$ 1,000,000
Products - Completed Operations Aggregate	\$ 1,000,000
Personal and Advertising Injury	\$ 1,000,000
Each Occurrence (Bodily Injury and Property Damage)	\$ 500,000

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person	\$ 100,000
Each accident	\$ 1,000,000

Property Damage:

Each accident	\$ 500,000
---------------	------------

4. Excess or Umbrella Liability:

Per Occurrence	\$ 1,000,000
General Aggregate	\$ 2,000,000

5. Contractor's Pollution Liability:

Each Occurrence	\$
General Aggregate	\$

If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES

SC-7.02 *Labor; Working Hours*

SC-7.02 Insert the following new paragraphs immediately after Paragraph 7.02.B:

- C. Not less than the prevailing hourly rate of wages, as set out in the Prevailing Wage Determination (Section 00 73 46) included in the Contract Documents, must be paid to all workers performing Work under the Contract. Contractor will forfeit a penalty to Owner of \$100 per day, or portion thereof, for each worker that is paid less than the prevailing rate for any Work done under the Contract by Contractor or by any Subcontractor.
- D. Every transient employer, as defined in Section 285.230, RSMo, must post in a prominent and easily accessible place at the Site a clearly legible copy of the following: (1) The notice of registration for employer withholding issued to such transient employer by the Missouri Director of Revenue; (2) Proof of coverage for workers’ compensation insurance or self-insurance signed by the transient employer and verified by the Missouri Department of Revenue through the records of the Missouri Division of Workers’ Compensation; and (3) The notice of registration for unemployment insurance issued to such transient employer by the Missouri Division of Employment Security. Any transient employer failing to comply with these requirements shall, under Section 285.234, RSMo, be liable for a penalty of \$500 per day until the required notices are posted as required by statute.
- E. Periods of excessive unemployment...
- F. Work authorization...

SC-7.03 *Services, Materials, and Equipment*

SC-7.03 Insert the following new paragraph immediately after Paragraph 7.03.C:

- D. Missouri domestic products...

SC-7.08 *Permits*

SC-7.09 *Taxes*

SC-7.09 Add the following new paragraph immediately after Paragraph 7.09.A:

- B. Owner is exempt from Missouri state sales and use taxes on materials and equipment to be incorporated in the Work.
 - 1. Owner will furnish the required tax exemption documents to Contractor for use in the purchase of tangible personal property to be incorporated or consumed in the Work.
 - 2. Owner’s exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

SC-7.12 *Safety and Protection*

SC-7.12 Insert the following new paragraph immediately after Paragraph 7.12.G:

- H. Contractor and all Subcontractors must require all on-site employees to complete the ten-hour construction safety training program required under Section 292.675, RSMo, if they have not previously completed the program, and have documentation of having done so. Contractor will forfeit a penalty to Owner of \$2500 plus an additional \$100 for each employee employed by Contractor or Subcontractor, for each day, or portion thereof, such employee is employed without the required training.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.03 *Project Representative*

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
 - 1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
 - 2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
 - 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
 - 4. Liaison:
 - a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner’s liaison with Contractor when Contractor’s operations affect Owner’s on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
 - 5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

6. Shop Drawings and Samples:
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
8. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
9. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
10. Records:
 - a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

- b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- c. Maintain records for use in preparing Project documentation.

11. Reports:

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
- b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The RPR shall not:

- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

SC-15.01 Progress Payments

SC-15.01.B Amend the first sentence of paragraph 15.01.B.1 to read as follows:

At least 40 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

SC-15.01.D Delete paragraph 15.01.D.1 in its entirety and insert the following in its place:

1. Thirty (30) days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

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DOCUMENT 00 73 46 – PREVAILING WAGE DETERMINATION

PART 1 - GENERAL

1.1 WAGE ORDER

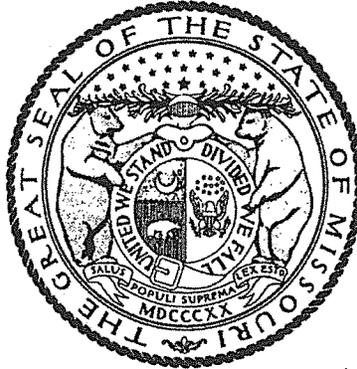
- A. The Wage Order applicable to the Work of this Contract is included on the following pages.

END OF SECTION 00 73 46

Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



JEREMIAH W. (JAY) NIXON, Governor

Annual Wage Order No. 22

Section 036

FRANKLIN COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by

John E. Lindsey, Director
Division of Labor Standards

This Is A True And Accurate Copy Which Was Filed With The Secretary of State: **March 10, 2015**

Last Date Objections May Be Filed: **April 9, 2015**

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	** Date of Increase	*	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Asbestos Worker (H & F) Insulator	1/16		\$38.36	55	60	\$21.41
Boilermaker	9/15		\$32.76	126	7	\$30.10
Bricklayer and Stone Mason	11/15		\$32.50	72	5	\$20.69
Carpenter	6/15	e	\$36.28	93	42	\$15.75
Cement Mason	6/15	d	\$29.39	80	6	\$17.30
Communication Technician	12/15		\$31.35	44	47	\$9.53 + 31.75%
Electrician (Inside Wireman)	8/15		\$34.20	82	71	\$10.78 + 39.5%
Electrician (Outside-Line Construction\Lineman)	9/15		\$42.52	43	45	\$5.00 + 36.5%
Lineman Operator	9/15		\$36.70	43	45	\$5.00 + 36.5%
Groundman	9/15		\$28.38	43	45	\$5.00 + 36.5%
Elevator Constructor	8/15	a	\$45.09	26	54	\$30.005
Glazier	6/15		\$33.13	87	31	\$19.58 + 10.53%
Ironworker	8/15		\$32.88	11	8	\$23.825
Laborer (Building):						
General		c	\$26.41	113	3	\$12.09
First Semi-Skilled		b	\$26.61	113	3	\$12.09
Second Semi-Skilled		b	\$26.61	113	3	\$12.09
Lather			USE CARPENTER RATE			
Linoleum Layer and Cutter	6/15		\$31.08	92	26	\$15.45
Marble Mason	10/15		\$31.43	76	51	\$14.17
Marble Finisher	10/15		\$26.18	76	51	\$13.47
Millwright	6/15		\$36.34	77	41	\$15.75
Operating Engineer						
Group I	6/15		\$32.16	3	66	\$24.16
Group II	6/15		\$32.16	3	66	\$24.16
Group III	6/15		\$30.26	3	66	\$24.16
Group III-A	6/15		\$32.16	3	66	\$24.16
Group IV	6/15		\$26.80	3	66	\$24.16
Group V	6/15		\$26.80	3	66	\$24.16
Painter	10/15		\$31.65	104	12	\$13.76
Pile Driver			USE CARPENTER RATE			
Pipe Fitter	7/15		\$37.00	91	69	\$26.68
Plasterer	7/15		\$31.06	67	3	\$17.53
Plumber	7/15		\$37.00	91	69	\$26.68
Roofer \ Waterproofer			\$30.70	15	73	\$16.67
Sheet Metal Worker	10/15		\$39.63	32	25	\$21.72
Sprinkler Fitter - Fire Protection	10/15		\$41.96	66	18	\$21.62
Terrazzo Worker	6/15		\$32.11	116	5	\$13.37
Terrazzo Finisher	10/15		\$30.35	116	5	\$11.84
Tile Setter	10/15		\$31.43	76	51	\$14.17
Tile Finisher	10/15		\$26.18	76	51	\$13.47
Traffic Control Service Driver			\$28.775	22	55	\$9.045
Truck Driver-Teamster			\$30.41	35	36	\$10.82

Fringe Benefit Percentage is of the Basic Hourly Rate

**Annual Incremental Increase

**REPLACEMENT PAGE
FRANKLIN COUNTY
BUILDING CONSTRUCTION OVERTIME SCHEDULE**

FED: Minimum requirement per Fair Labor Standards Act means time and one-half (1 ½) shall be paid for all work in excess of forty (40) hours per work week.

NO. 3: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the straight time rate. The regular workday shall begin between the hours of 6:00 a.m. and 9:00 a.m. The Employer may have the option to schedule the work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be paid at the applicable overtime rate. If the Employer elects to work from Monday through Thursday and is stopped due to inclement weather, holiday or other conditions beyond the control of the Employer, they shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours for the workweek. All overtime work performed on Monday through Saturday shall be paid at time and one-half (1½) the hourly rate plus an amount equal to one-half (½) of the hourly Total Indicated Fringe Benefits. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Shifts may be established when considered necessary by the Employer. Shift hours and rates will be as follows. If shifts are established, work on the First Shift will begin between 6:00 a.m. and 9:00 a.m. and consist of eight (8) hours of work plus one-half hour unpaid lunch. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and consist of eight (8) hours of work plus one-half hour unpaid lunch. Work on the second shift will begin between 2:00 p.m. and 5:00 p.m. and be paid the straight time rate plus \$2.50 per hour. The third shift shall start eight hours after the start of the second shift and consist of eight (8) hours plus one-half hour unpaid lunch. Work on the third shift will begin between 10:00 p.m. and 1:00 a.m. and be paid the straight time rate plus \$3.50 per hour. The additional amounts that are to be paid are only applicable when working shifts. Shifts that begin on Saturday morning through those shifts which end on Sunday morning will be paid at time and one-half these rates. Shifts that begin on Sunday morning through those shifts which end on Monday morning will be paid at double time these rates.

NO. 11: Means eight (8) hours shall constitute a day's work, with the starting time to be established between 6:00 a.m. and 8:00 a.m. from Monday to Friday. Time and one-half (1½) shall be paid for first two (2) hours of overtime Monday through Friday and the first eight (8) hours on Saturday. All other overtime hours Monday through Saturday shall be paid at double (2) time rate. Double (2) time shall be paid for all time on Sunday and recognized holidays or the days observed in lieu of these holidays.

NO. 15: Means the regular working day shall be scheduled to consist of at least eight (8) hours, but no more than ten (10) consecutive hours, exclusive of the lunch period. The regular working day may be scheduled to commence at any time between the hours of 5:00 a.m. and 10:00 a.m. All work performed in excess of forty (40) hours in one work week, or in excess of ten (10) hours in one work day shall be paid at the rate of one and one-half (1½) times the regular hourly wage scale. Any work performed on a Saturday shall be paid for at the rate of one and one-half (1½) times the regular hourly wage scale unless such Saturday work falls under the category of Saturday Make-Up Day. Any work performed by Employees anywhere on Sunday or recognized holidays, shall be paid for at the rate of double (2) time the regular wage scale. If, during the course of a work week, an Employee is unable to work for any reason, and, as a result, that Employee has not accumulated forty (40) hours of compensable time at the straight time rate, the Employer, at his option may offer the Employee the opportunity to work on Saturday at straight time; provided, however, if during the period worked by said Employee on Saturday, the Employee's compensable time at the straight time rate exceeds forty (40) hours, all time worked in excess of the forty (40) hours will be paid at the rate of one and one-half (1½) times the regular hourly wage scale.

NO. 22: Means a regular work week of forty (40) hours will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A workday is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time may be advanced or delayed if mutually agreed to by the interest parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

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NO. 26: Means that the regular working day shall consist of eight (8) hours worked between 6:00 a.m., and 5:00 p.m., five (5) days per week, Monday to Friday, inclusive. Hours of work at each jobsite shall be those established by the general contractor and worked by the majority of trades. (The above working hours may be changed by mutual agreement). Work performed on Construction Work on Saturdays, Sundays and before and after the regular working day on Monday to Friday, inclusive, shall be classified as overtime, and paid for at double (2) the rate of single time. The employer may establish hours worked on a jobsite for a four (4) ten (10) hour day work week at straight time pay for construction work; the regular working day shall consist of ten (10) hours worked consecutively, between 6:00 a.m. and 6:00 p.m., four (4) days per week, Monday to Thursday, inclusive. Any work performed on Friday, Saturday, Sunday and holidays, and before and after the regular working day on Monday to Thursday where a four (4) ten (10) hour day workweek has been established, will be paid at two times (2) the single time rate of pay. The rate of pay for all work performed on holidays shall be at two times (2) the single time rate of pay.

NO. 32: The regular working day shall consist of eight (8) hours of labor on the job between six (6) a.m. and four (4) p.m. and the regular working week shall consist of five (5) consecutive eight (8) hour day's of labor on the job beginning with Monday and ending with Friday of each week. The normal work week is 40 hours. All full-time or part-time labor performed during such hours shall be recognized as regular working hours and paid for at the regular hourly rate. All work performed during regular work hours on Saturdays will be paid at time and one-half (1 ½). All work performed outside of regular working hours and performed during the regular work week, shall be at double (2) times the regular rate, except that the first two (2) hours following the regular work day shall be paid at one and one-half (1½) times the regular rate. An early starting time of 6:00 a.m. may be used mutually agreed upon by the interested parties. SHIFT RATE: Shift work would start after 4:00 p.m. to 6:00 a.m. The first 8 hours would be at 115% of the basic wage rate. Overtime Monday through Friday would be at 1 ½ of base shift rate. Saturday regular work day hours – 1½ of base shift rate. Saturday – work after 8 hours – 2 times the basic wage rate. Sunday and Holidays – 2 times the basic wage rate. All work performed on recognized holidays and Sundays shall be paid double (2) time. Appropriate overtime rates to be based on fifteen minute increments.

NO. 33: Means the standard work day and week shall be eight (8) consecutive hours of work between the hours of 6:00 a.m. and 6:00 p.m., excluding the lunch period Monday through Friday, or shall conform to the practice on the job site. Four (4) days at ten (10) hours a day may be worked at straight time, Monday through Friday and need not be consecutive. All overtime, except for Sundays and holidays shall be at the rate of time and one-half (1½). Overtime worked on Sundays and holidays shall be at double (2) time.

NO. 35: Means a regular work week of forty (40) hours, will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof maybe worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A work day is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time maybe advanced or delayed if mutually agreed to by the interested parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

NO. 43: Eight (8) hours shall constitute a work day between the hours of 7:00 a.m. and 4:30 p.m. Forty (40) hours within five (5) days, Monday through Friday inclusive, shall constitute the work week. Work performed in the 9th and 10th hour, Monday through Friday, shall be paid at time and one-half (1½) the regular straight time rate of pay. Contractor has the option to pay two (2) hours per day at the time and one-half (1½) the regular straight time rate of pay between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. Work performed outside the regularly scheduled working hours and on Saturdays, Sundays and recognized legal holidays, or days celebrated as such, shall be paid for at the rate of double (2) time.

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NO. 44: Means forty (40) hours shall constitute a work week, Monday through Friday. Eight (8) hours shall constitute a work day. Hours of work shall be between the hours of 7:00 a.m. and 4:30 p.m. All work performed before 7:00 a.m. and after 4:30 p.m. and all work performed in excess of eight (8) hours in any one work day, over forty (40) hours in any work week and the first eight (8) hours of work on Saturday, shall be paid at the rate of one and one-half (1½) times the regular rate of pay. All hours worked in excess of eight (8) hours on Saturday, all hours worked on Sunday and on holidays, or days that may be celebrated as such, and as designated by the federal government, shall be paid at two (2) times the regular rate of pay. All shifts for work performed between the hours of 4:30 p.m. and 1:00 a.m. shall receive eight (8) hours pay at the regular hourly rate of pay plus two dollars (\$2.00) per clock hour. All work performed between the hours of 12:30 a.m. and 9:00 a.m. on a third shift shall receive eight (8) hours pay at the regular hourly rate plus four dollars (\$4.00) per clock hour. All overtime work required after the completion of a regular shift shall be paid at one and one-half times (1½ x) the "shift" hourly rate.

NO. 55: Means the regular work day shall be eight (8) hours between 6:00 a.m. and 4:30 p.m. The first two (2) hours of work performed in excess of the eight (8) hour work day, Monday through Friday, and the first ten (10) hours of work on Saturday, shall be paid at one & one-half (1½) times the straight time rate. All work performed on Sunday, observed holidays and in excess of ten (10) hours a day, Monday through Saturday, shall be paid at double (2) the straight time rate.

NO. 66: Means eight (8) hours shall constitute a day's work beginning at 7:00 a.m. (or 8:00) A.M. and ending at 3:30 (or 4:30) P.M. The work week shall be forty (40) hours beginning Monday at 7:00 a.m. (or 8:00) A.M. and ending Friday at 3:30 (or 4:30) P.M. The Employer at his option may use a flexible starting time between the hours of 6:00 a.m. and 8:00 a.m. All overtime, that is worked outside of the above established working hours of Monday through Friday, shall be paid at double (2) time, including Saturdays, Sundays and Holidays.

NO. 67: Means eight (8) hours shall constitute a day's work, with a flexible starting time to begin between 6:00 a.m. to 8:00 a.m., five (5) days a week, Monday through Friday. Any work over eight (8) hours in any one day shall be at the overtime rate, which is time & one-half (1½). Any work on Saturday shall be at time & one-half (1½), unless a Make-Up Day due to inclement weather is in effect. Any work on Sundays or holidays shall be at double (2) time. Four (4) days, ten (10) hours each day to be worked during Monday through Friday, shall be paid at straight time. A Make-Up Day Due To Inclement Weather Only - Employee(s) will be permitted to work an eight (8) hour make-up day on Saturday only, and the employee will receive the regular straight time wage rate.

NO. 72: Means that except as is otherwise provided herein, the work week shall be determined to begin at 8:00 a.m. Wednesday and end at 4:30 p.m. on the following Tuesday. Except as herein provided, working hours are from 8:00 a.m. to 11:55 a.m. and 12:30 p.m. to 4:25 p.m. and no more than the regular hours shall be worked during the forenoon or afternoon at the regular rate. In the case of days of inclement weather starting time and quitting time may be adjusted so long as the hours worked on such days do not exceed eight (8) and do not extend beyond 4:30 p.m. In circumstances where the Employee or Employees have regularly been working overtime on a particular day or days, no adjustment in the starting time shall operate to deprive Employees of overtime pay, which they would have otherwise received but for the change in the starting time. The parties understand that the application of the provisions of the preceding sentence will result in Employees receiving overtime pay even where they have not worked more than with (8) hours on a particular day. Regardless of the starting time, the forenoon working hours shall end at 11:55 a.m. and the afternoon working hours shall begin at 12:30 p.m. and end 8 hours and 25 minutes after the starting time fixed by the Employer for forenoon hours. Work performed by an employee on a non-holiday Saturday, except as hereinafter provided, or at night or before or after regular working hours on a non-holiday weekday, shall be considered overtime work, for which Employees working during such time shall be paid at the rate of one and one-half (1½) times their regular hourly wage rate for each hour or fraction thereof, worked during such time. Work performed on a Sunday or the recognized holidays shall be considered overtime work for which the Employee shall be paid twice the amount of his or her regular hourly wage rate for each hour or fraction thereof worked on any such day.

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NO. 76: Means the standard workday shall consist of eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. with a thirty (30) minute unpaid lunch hour occurring in the middle of the shift. The standard workweek shall consist of five standard workdays commencing on Monday and ending on Friday. The normal starting and quitting times may be changed by mutual consent of interested parties. All time worked before and after the established eight (8) hour workday, Monday through Friday, and all time worked on Saturday, shall be paid for at the rate of time & one-half (1½) the hourly base wage rate in effect. All time worked on Sunday and holidays shall be paid at the rate of double (2) the hourly wage in effect. All work done on Saturday will be done at time & one-half (1½), unless Saturday shall be used as a make-up day. If an employee should lose one or more days in a work week and use Saturday as a make-up day the pay shall be at the regular hourly base wage rate and benefits.

NO. 77: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the regular straight time hourly rate. The regular workday shall begin on the job site between the hours of 6:00 a.m. and 8:00 a.m. with the starting time to be determined by the Employer, unless project owner requires different starting time. This adjustable starting time can, at the Employer's option, be staggered to permit starting portions of the work force at various times within the prescribed hours. The Employer may establish a four (4) ten (10) hour shift exclusive of the thirty (30) minute lunch period at the straight time wage rate. Forty (40) hours per week shall constitute a week's work Monday through Thursday. In the event a job is down due to weather conditions, safety or other conditions beyond the control of the Employer, then Friday may, at the option of the employer, be worked as a make-up day at the straight time wage rate. Straight time is not to exceed ten (10) hours a day or forty (40) hours per week. Time and one-half (1 ½) shall be paid for all overtime hours worked during the week, Monday through Friday and for all work performed on Saturday. Double (2) time shall be paid for all time worked on Sunday and recognized holidays.

NO. 80: Means eight (8) hours shall constitute the regular work day and forty (40) hours a work week, Monday through Friday. The Employer shall establish the starting time between 6:30 a.m. through 9:00 a.m. An Employer may further adjust the starting time up to 9:30 a.m. throughout the year. Time and one-half (1½) shall be paid after eight (8) consecutive hours worked after the established starting time and for hours worked before the established starting time. Time and one-half (1½) shall be paid for work performed on Saturdays. Work performed on Sundays and Holidays shall be paid at the double (2) time rate of pay. The Employer when working on Highway and Road Work may have the option to schedule the work week for his paving crew only from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be at the applicable overtime rate of time and one-half (1½). If the Employer elects to work from Monday through Thursday and is stopped due to inclement weather (rain, snow, sleet falling), the Employer shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours.

NO. 82: Means the work day shall consist of eight (8) hours worked between 7:00 a.m. and 4:30 p.m. Forty (40) hours will constitute the work week from Monday through Friday, inclusive. Up to four (4) hours of overtime work per day performed before or after the assigned normal work day, (twelve (12) continuous hours, starting no earlier than 6:00 a.m., Monday through Friday), shall be paid at a rate of one and one-half times (1.5x) that employee's hourly rate. Any additional overtime, Monday through Friday, shall be paid at two times (2x) the regular rate of pay. The first eight hours of overtime work on Saturday shall be paid at the rate of one and one-half times (1.5x) the regular rate of pay. Hours worked in excess of eight (8) hours on Saturday shall be paid at two times (2x) the regular rate of pay. Double time shall be paid for work performed on Sundays, recognized legal holidays or days that may be celebrated as such as designated by the federal government. All shifts for work performed between the hours of 4:30 p.m. and 1:00 a.m. shall be paid at the regular hourly rate plus two dollars (\$2.00) per clock hour. All shifts for work performed between the hours of 12:30 a.m. and 9:00 a.m. shall be paid at the regular hour rate plus four dollars (\$4.00) per clock hour. All overtime work required after the completion of a regular shift shall be paid at one and one-half times (1.5x) the "shift" hourly rate.

NO. 87: Means eight (8) hours starting between 6:00 a.m. and 8:00 a.m. and ending between 2:30 p.m. and 4:30 p.m. at the Employers discretion shall constitute a day's work. Any work prior to 6:00 a.m. or after eight (8) hours shall be paid at the overtime rate. Five (5) days from Monday through Friday inclusive shall constitute a regular work week. All hours before and after these regular hours shall be considered overtime and shall be paid for at the rate of double (2) time. All work on Saturday and Sunday shall be paid at double (2) the prevailing scale of wages.

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NO. 91: Means eight (8) hours shall constitute a day's work commencing at 7:00 a.m. and ending at 3:30 p.m., allowing one-half (½) hour for lunch. The option exists for the Employer to use a flexible starting time between the hours of 6:00 a.m. and 9:00 a.m. The regular workweek shall consist of forty (40) hours of five (5) workdays, Monday through Friday. The workweek may consist of four (4) ten (10) hour days from Monday through Thursday, with Friday as a make-up day. If the make-up day is a holiday, the employee shall be paid at the double (2) time rate. The employees shall be paid time and one-half (1½) for work performed on Saturdays, before the regular starting time or after the regular quitting time or over eight (8) hours per work day (unless working a 10-hour work day, then time and one-half (1½) is paid for work performed over ten (10) hours a day) or over forty (40) hours per work week. Work performed on Sundays and recognized holidays shall be paid at the double (2) time rate of pay. **SHIFT WORK:** When it is necessary for the project to operate in shifts, there will be three (3) eight (8) hour shifts commencing at 8:00 a.m. Shift work must continue for a period of not less than three (3) consecutive work days, two (2) days which must be regular work days (Monday through Friday). In the event the second or third shift of any regular work day shall fall into a Saturday or a holiday, such extension into a Saturday or holiday shall be considered as part of the previous workday and employees shall be paid at the regular shift rate. The first day shift shall work a regular eight (8) hour day at regular rates. The second shift shall be eight (8) hours regular time pay plus \$2.50 per hour premium for eight (8) hours work. Third shift will be for eight (8) hours regular time pay plus \$3.00 per hour premium for eight (8) hours work.

NO. 92: Means all work performed from 8:00 a.m. to 4:30 p.m., Monday through Friday, will be at straight time pay up to forty (40) hours per week. All work performed Monday through Friday before 8:00 a.m. and after 4:30 p.m. will be done at time and one-half (1½). All work done on Saturday will be done at time and one-half (1½), unless the employer and employee agree that Saturday shall be used as a make-up day. The Employer may use a flexible starting time of 7:00 a.m. to 8:00 a.m., and quitting time of 3:30 p.m. to 4:30 p.m., and any such different work starting time shall determine whether wages are payable at the straight rate or the premium rate. All work performed on Saturday shall be paid for at time and one-half (1½), unless the Saturday has been used as a make-up day. All work performed on Sunday and holidays shall be paid for at the rate of double (2) time.

NO. 93: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the regular straight time hourly rate. The regular workday shall begin on the job site between the hours of 6:00 a.m. and 8:00 a.m. with the starting time to be determined by the Employer, unless project owner requires different starting time. This adjustable starting time can, at the Employer's option, be staggered to permit starting portions of the work force at various times within the prescribed hours. The Employer may establish a four (4) ten (10) hour shift exclusive of the thirty minute unpaid lunch period at the straight time wage rate. Forty (40) hours per week shall constitute a week's work Monday through Thursday. In the event a job is down due to weather conditions, safety or other conditions beyond the control of the Employer, then Friday may, at the option of the Employer, be worked as a makeup day at the straight time wage rate. Straight time is not to exceed ten (10) hours a day or forty (40) hours per week. Starting time will be designated by the Employer. Time and one-half (1 ½) shall be paid for all overtime hours worked during the week, Monday through Friday and for all work performed on Saturday. Double (2) time shall be paid for all time worked on Sunday and all recognized holidays.

NO. 104: Means eight (8) hours per day shall constitute a standard work day between the hours of 6:00 a.m. and 8:00 p.m. The standard work week shall be forty (40) hours between 6:00 a.m. on Monday and ending 8:00 p.m. on Friday. An overtime rate of time and one-half (1½) the base hourly rate shall be paid on all hours in excess of eight (8) hours in a day Monday through Friday. Saturdays shall be considered overtime and work done on Saturday shall be paid at time and one-half (1½) the prevailing scale. Sundays and holidays shall be considered overtime and work done on these days shall be paid at double (2) the prevailing scale.

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NO. 113: The regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute lunch period, with pay at the regular straight time hourly rate. The regular workday shall begin on the job site between 6:00 a.m. and 9:00 a.m. Overtime rates shall not be broken down into less than thirty (30) minute units of time. The Employer shall have the option of working five (5) eight (8) hour days or four (4) ten (10) hour days, Monday through Friday. If an Employer elects to work five (5) eight (8) hour days during any work week, hours worked more than eight (8) per day or forty (40) per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof, by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. The Employer may establish a four (4) ten (10) hour shift exclusive of the thirty (30) minute unpaid lunch period at the straight time wage rate. Forty (40) hours per week shall constitute a week's work, Monday through Thursday. In the event a job is down due to weather conditions, holiday, or other conditions beyond the control of the Employer, then Friday may, at the option of the Employer, be worked as a make-up day at the straight time wage rate. Straight time is not to exceed ten (10) hours a day or forty (40) hours per week. If an Employer elects to work eight (8) hour days and loses a day due to inclement weather, he may work ten (10) hour days the remainder of the week at straight time. In the event the Laborer working is assisting another craft being paid overtime wage rates, the laborer will receive time and one-half (1½) for hours worked on Saturday. Sundays and recognized Holidays or days observed as such, shall be paid at the double (2) time rate. Projects That Cannot Be Performed During Regular Workday: If required by owner, the contractor may perform work outside the normal work hours, and employees shall be paid the applicable straight time hourly wage rate plus a premium of (\$2.50) per hour for the first eight hours worked. Any hours worked in excess of eight (8) hours shall be paid at the applicable overtime rate plus the (\$2.50) per hour premium. Shift work: Shifts shall be established for a minimum of three (3) consecutive workdays. Shift hours will be defined as: First shift eight (8) hours including thirty (30) minutes for lunch. Second shift-eight (8) hours including thirty (30) minutes for lunch. Third shift eight (8) hours including thirty (30) minutes for lunch. The first shift will be paid at eight (8) hours straight time. The second shift will be paid eight (8) hours straight time plus a two dollar and fifty cent (\$2.50) per hour premium, and the third shift shall be paid eight (8) hours straight time plus a three dollar and fifty cent (\$3.50) per hour premium. Payment for shift work shall be determined by when an Employer first begins his shift operation, i.e., the shifts which begin on Friday morning and end on Saturday morning will be paid at straight time; the shifts which start on Saturday morning and end on Sunday morning will be paid at time and one-half (1½); the shifts which start on Sunday morning and end on Monday morning will be paid at double time. Employees working during the normal workday shall receive first shift pay; employees working predominantly during the evening hours shall receive second shift pay; employees working predominately during the early morning hours shall receive third shift pay.

NO. 116: Means the standard work day shall consist of eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. The standard work week shall consist of five standard work days commencing on Monday and ending on Friday inclusive. All time worked before and after the established eight (8) hour work day, Monday through Friday, and all time worked on Saturdays, shall be paid for at the rate of time & one-half (1½) the hourly base wage rate in effect. All time worked on Sundays and recognized holidays shall be paid for at the rate of double (2) the hourly base wage rate in effect.

NO. 126: Means eight (8) hours per day shall constitute a day's work and forty (40) hours per week, Monday through Friday, shall constitute a week's work. The regular starting time shall be 8:00 a.m. If a second or third shift is used, the regular starting time of the second shift shall be 4:30 p.m. and the regular starting period for the third shift shall be 12:30 a.m. These times may be adjusted by the employer. The day shift shall work a regular eight (8) hours shift as outlined above. Employees working a second shift shall receive an additional \$0.25 above the regular hourly rate and perform seven and one-half (7½) hours work for eight (8) hours pay. Third shift employees shall be paid an additional \$0.50 above the regular hourly rate and work seven (7) hours for eight (8) hours pay. When circumstances warrant, the Employer may change the regular workweek to four (4) ten-hour days at the regular time rate of pay. All time worked before and after the established workday of eight (8) hours, Monday through Friday, and all time worked on Saturday shall be paid at the rate of time and one-half (1½) except in cases where work is part of an employee's regular Friday shift. All time worked on Sunday and recognized holidays shall be paid at the double (2) time rate of pay except in cases where work is part of an employee's previous day's shift. For all overtime hours worked \$28.81 of the fringe benefits portion of the prevailing wage shall be paid at the same overtime rate at which the cash portion of the prevailing wage is to be paid. The remaining \$1.29 of the fringe benefit portion of the prevailing wage may be paid at straight time.

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NO. 3: All work done on New Year's Day, Decoration Day, July 4th, Labor Day, Veteran's Day, Thanksgiving and Christmas shall be compensated at the double (2) time rate of pay. When any of these holidays fall on a Sunday, the following Monday shall be observed.

NO. 5: All work that shall be done on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day shall be paid at the double (2) time rate of pay.

NO. 6: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day and any additional holidays which may be mutually agreed upon. Whenever any such holiday falls on a Sunday, the following Monday shall be recognized and observed as the holiday. Work performed on Sundays and holidays shall be paid at the double time rate of pay. No work shall be performed on Labor Day.

NO. 7: The following days are assigned days and are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. If a holiday falls on a Saturday, it shall be observed on the preceding Friday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This is applied to protect Labor Day. When a holiday falls during the normal workweek, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week. However, no reimbursement for these eight (8) hours is to be paid to the workman unless worked. If workman are required to work the above enumerated holidays or days observed as such, or on Sunday, they shall receive double (2) the regular rate of pay for such work.

NO. 8: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day, or the days observed in lieu of these holidays, shall be paid at the double time rate of pay.

NO. 12: All work done on New Year's Day, Decoration Day, Independence Day, Veteran's Day, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. Should any of these days fall on Sunday, then the following day shall be observed as the holiday. Under no circumstances shall employees be permitted to work on Labor Day.

NO. 18: All work done on New Year's Day, Memorial Day, July 4th, Labor Day, Veteran's Day, Thanksgiving Day, the Friday following Thanksgiving and Christmas Day shall be paid at the double time rate of pay. When one of the above holidays falls on Sunday, the following Monday shall be considered the holiday, and when one of the above holidays falls on Saturday, the preceding Friday shall be considered the holiday, and all work performed on said day(s) shall be paid at the double time rate.

NO. 25: All work done on New Year's Day, Martin Luther King Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving, Christmas Day, Presidential Election Day, or days locally observed as such, and Saturday and Sunday shall be recognized as holidays and shall be paid at the double (2) time rate of pay. If a named holiday falls on a Saturday, the holiday will be observed on the preceding Friday. When a named holiday falls on Sunday, the Monday after will be observed as the holiday. Appropriate overtime rates to be based on fifteen minute increments.

NO. 26: All work done on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. When a Holiday occurs on Saturday it shall not be observed on either the previous Friday or the following Monday. Such days shall be regular work days. If such a holiday occurs on Sunday it shall be observed on the following Monday.

NO. 31: All work done on New Year's Day, Presidents Day, Good Friday, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Friday after Thanksgiving Day, Christmas Day, and Employee's Birthday shall be paid at the double time rate of pay. If a holiday falls on Sunday, the following Monday will be observed as the recognized holiday. If a holiday falls on Saturday, the preceding Friday will be observed as the recognized holiday.

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NO. 36: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make-up day when an observed holiday occurs during the work week. Employees have the option to work that make-up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 41: The following days shall be observed as legal holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. No work shall be performed on the Fourth of July, Labor Day or Christmas Day. Any work performed on the above holidays shall be paid for at two (2) times the regular straight time rate of pay. When any of the above holidays fall on Sunday, the following Monday shall be observed as such holiday. If a holiday falls on Saturday, it shall not be considered to be observed on the previous Friday or following Monday. Such days shall be regular workdays.

NO. 42: The following days shall be observed as legal holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. No work shall be performed on the Fourth of July, Labor Day or Christmas Day. Any work performed on the above holidays shall be paid for at two (2) times the regular straight time rate of pay. When any of the above holidays fall on Sunday, the Monday following shall be observed as such holiday. If a holiday falls on Saturday, it shall not be considered to be observed on the previous Friday or following Monday. Such days shall be regular workdays.

NO. 45: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving, the day before Christmas, and Christmas Day, shall be paid at the double time rate of pay.

NO. 47: The following holidays are recognized: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day. When a holiday listed above falls on Saturday, it shall be celebrated on the Friday preceding the holiday. When a holiday falls on Sunday, the following Monday shall be observed. Holidays referred to above shall be paid for at the double (2) time rate of pay when worked.

NO. 51: All time worked on Sundays and recognized holidays shall be paid for at the rate of double (2) the hourly base wage rate in effect. The Employer agrees to recognize the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. If the holiday falls on Sunday, it shall be recognized on the following Monday. If the holiday falls on a Saturday, it shall be recognized as a Saturday only holiday.

NO. 54: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, the Friday after Thanksgiving Day, and Christmas Day shall be paid at the double (2) time rate of pay. When a holiday falls on Saturday, it shall be observed on Friday. When a holiday falls on Sunday, it shall be observed on Monday.

NO. 55: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workmen unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make up day when an observed holiday occurs during the work week. Employees have the option to work that make up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

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NO. 60: All work performed on New Year's Day, Armistice Day (Veteran's Day), Decoration Day (Memorial Day), Independence Day (Fourth of July), Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. No work shall be performed on Labor Day except when triple (3) time is paid. When a holiday falls on Saturday, Friday will be observed as the holiday. When a holiday falls on Sunday, the following Monday shall be observed as the holiday.

NO. 66: All work performed on Sundays and the following recognized holidays, or the days observed as such, of New Year's Day, Decoration Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Whenever any such holidays fall on a Sunday, the following Monday shall be observed as a holiday.

NO. 69: All work performed on New Year's Day, Memorial Day, July Fourth, Labor Day, Veteran's Day, Thanksgiving Day or Christmas Day shall be compensated at double (2) their straight-time hourly rate of pay. Friday after Thanksgiving and the day before Christmas are also holidays, however, if the employer chooses to work the normal work hours on these days, the employee will be paid at straight -time rate of pay. If a holiday falls on a Saturday, the holiday will be observed on Saturday; if a holiday falls on a Sunday, the holiday will be observed on the following Monday.

NO. 71: All work performed on the following recognized holidays, or days that may be celebrated as such, shall be paid at the double (2) time rate of pay: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Day after Thanksgiving and Christmas Day. If a holiday falls on Sunday, it shall be celebrated on Monday. If a holiday falls on Saturday, it shall be celebrated on the Friday proceeding such Saturday.

NO. 73: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day (or mutually agreed date of the Friday after Thanksgiving Day may be substituted for Veteran's Day), Thanksgiving Day and Christmas Day, or in the event that any of said Holidays falls on Sunday, then the day or days generally recognized as such. Any work performed anywhere on any of the aforesaid Holidays, or on the day or days recognized and observed as such, shall be paid for at double (2) time the regular hourly rate.

OCCUPATIONAL TITLE	* Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Carpenter	6/15	\$33.43	23	16	\$15.55
Cement Mason	6/15	\$29.39	80	22	\$17.22
Electrician (Outside-Line Construction\Lineman)	9/15	\$42.52	9	12	\$5.00 + 36.5%
Lineman Operator	9/15	\$36.70	9	12	\$5.00 + 36.5%
Lineman - Tree Trimmer	10/15	\$24.99	32	31	\$9.95 + 3%
Groundman	9/15	\$28.38	9	12	\$5.00 + 36.5%
Groundman - Tree Trimmer	10/15	\$19.80	32	31	\$8.10 + 3%
Laborer					
General Laborer	6/15	\$29.06	2	4	\$12.82
Skilled Laborer	6/15	\$29.66	2	4	\$12.82
Millwright	6/15	\$33.43	23	16	\$15.55
Operating Engineer					
Group I	6/15	\$32.16	10	9	\$24.16
Group II	6/15	\$32.16	10	9	\$24.16
Group III	6/15	\$30.86	10	9	\$24.16
Group IV	6/15	\$27.40	10	9	\$24.16
Oiler-Driver	6/15	\$27.86	10	9	\$24.16
Pile Driver	6/15	\$33.43	23	16	\$15.55
Traffic Control Service Driver		\$28.775	26	25	\$9.045
Truck Driver-Teamster		\$30.41	25	21	\$10.82

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate sheet.

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FED: Minimum requirement per Fair Labor Standards Act means time and one-half (1 ½) shall be paid for all work in excess of forty (40) hours per work week.

NO. 2: Means a regular workweek shall be forty (40) hours and will start on Monday and end on Friday. The Employer shall have the option of working five 8-hour days or four 10-hour days Monday through Friday. If an Employer elects to work five 8-hour days during any workweek, hours worked more than eight (8) per day or 40 per week shall be paid at time and one-half the hourly rate Monday through Friday. If an Employer elects to work four 10-hour days in a week, work performed more than ten (10) hours per day or 40 hours per week shall be paid at time and one-half the hourly rate Monday through Friday. When working a five 8-hour day schedule and an Employer is prevented from working forty (40) hours Monday through Friday, or any part thereof, by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. If an Employer is working a four 10-hour day schedule and loses a day due to inclement weather, he may work 10 hours Friday at straight time. All hours worked over the 40 hours Monday through Friday will be paid at 1 ½ overtime rate. A workday shift is to begin at the option of the Employer, between 6:00 a.m. and not later than 9:00 a.m. However, the project starting time may be advanced or delayed if required. If workmen are required to work the enumerated holidays or days observed as such or Sundays, they shall receive double (2) the regular rate of pay for such work. Overtime shall be computed at one-half (1/2) hour intervals. Shift: The Contractor may elect to work one, two or three shifts on any work. When operating on more than one shift, the shifts shall be known as the day shift, swing shift, and graveyard shift as such terms are recognized in the industry. When two shifts are worked on any operation, the shifts will consist of eight (8) or ten (10) hours exclusive of lunchtime. When three shifts are worked the first day or day shift will consist of eight (8) hours exclusive of lunchtime. The second or swing shift shall consist of seven and one-half (7 1/2) hours work for eight hours pay, exclusive of lunchtime, and the third or the graveyard shift shall consist of seven (7) hours work for eight (8) hours pay, exclusive of the lunchtime. All time in excess of normal shifts shall be considered overtime. Multiple shift (the two or three shift) operation will not be construed on the entire project if at anytime it is deemed advisable and necessary for the Employer to multiple shift a specific operation. However, no shift shall be started between midnight and six a.m. except the graveyard shift on a three-shift operation, or except in an unusual or emergency situation. If an Employer starts a shift between midnight and 6 a.m. except the graveyard shift on a three-shift operation, he shall reimburse all employees for the entire shift at the double time rate. Completion of the second shift on a two-shift operation or completion of the graveyard shift on a three-shift operation that carries over into Saturday morning, shall be at the straight time rate. Overtime shall be computed at ½ hour intervals.

NO. 9: Eight (8) hours shall constitute a work day between the hours of 7:00 a.m. and 4:30 p.m. Forty (40) hours within five (5) days, Monday through Friday inclusive, shall constitute the work week. Work performed in the 9th and 10th hour, Monday through Friday, shall be paid at time and one-half (1½) the regular straight time rate of pay. Contractor has the option to pay two (2) hours per day at the time and one-half (1½) the regular straight time rate of pay between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. Work performed in the first eight (8) hours on Saturday shall be paid at the rate of one and eight tenths (1.8) the regular straight time rate. Work performed outside these hours and on Sundays and recognized legal holidays, or days celebrated as such, shall be paid for at the rate of double (2) time.

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FRANKLIN COUNTY
OVERTIME SCHEDULE - HEAVY CONSTRUCTION**

NO. 10: Means the regular workday for which employees shall be compensated at straight time hourly rate of pay shall, unless otherwise provided for, begin at 8:00 a.m. and end at 4:30 p.m. The regular workweek shall consist of five (5) days, Monday through Friday, beginning at 8:00 a.m. and ending at 4:30 p.m. except as may be modified. The starting time may be either advanced or delayed one hour or two hours at the discretion of the Employer. The Employer may have the option to schedule his work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be at the applicable overtime rate. If the Employer elects to work Monday through Thursday and is stopped due to inclement weather, holidays or other conditions beyond the control of the Employer, he shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hour workweek. All necessary overtime and work performed on Saturday, shall be paid at time and one-half (1½) the hourly rate, plus an amount equal to one-half (½) of the hourly Total Indicated Fringe Benefits. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate, plus an amount equal to the hourly Total Indicated Fringe Benefits. Shifts may be established when considered necessary by the Employer. Shift hours and rates will be as follows. If shifts are established, work on the First Shift will begin between 6:00 a.m. and 9:00 a.m. and consist of eight (8) hours of work plus one-half hour unpaid lunch. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and consist of eight (8) hours of work plus one-half hour unpaid lunch. Work on the second shift will begin between 2:00 p.m. and 5:00 p.m. and be paid the straight time rate plus \$2.50 per hour. The third shift shall start eight hours after the start of the second shift and consist of eight (8) hours plus one-half hour unpaid lunch. Work on the third shift will begin between 10:00 p.m. and 1:00 a.m. and be paid the straight time rate plus \$3.50 per hour. The additional amounts that are to be paid are only applicable when working shifts. Shifts that begin on Saturday morning through those shifts which end on Sunday morning will be paid at time and one-half these rates. Shifts that begin on Sunday morning through those shifts which end on Monday morning will be paid at double time these rates.

NO. 23: Means the regular workweek shall start on Monday and end on Friday, except where the Employer elects to work Monday through Thursday, (10) hours per day. All work over ten (10) hours in a day or forty (40) hours in a week shall be at the overtime rate of one and one-half (1½) times the regular hourly rate. The regular workday shall be either eight (8) or ten (10) hours. If a job can't work forty (40) hours Monday through Friday because of inclement weather or other conditions beyond the control of the Employer, Friday or Saturday may be worked as a make-up day at straight time (if working 4-10's). Saturday may be worked as a make-up day at straight time (if working 5-8's). An Employer, who is working a four (4) ten (10) hour day work schedule may use Friday as a make-up day when a workday is lost due to a holiday. A workday is to begin at the option of the Employer but not later than 11:00 a.m. except when inclement weather, requirements of the owner or other conditions beyond the reasonable control of the Employer prevent work. Except as worked as a make-up day, time on Saturday shall be worked at one and one-half (1½) times the regular rate. Work performed on Sunday shall be paid at two (2) times the regular rate. Work performed on recognized holidays or days observed as such, shall also be paid at the double (2) time rate of pay. **For all overtime hours worked during the week or on Saturday \$14.55 of the fringe benefits portion of the prevailing wage shall be paid at time and one-half (1½). For all overtime hours worked on Sundays or recognized holidays \$14.55 of the fringe benefits portion of the prevailing wage shall be paid double time. The remaining \$.50 of the fringe benefit portion of the prevailing wage shall be paid at straight time.**

NO. 25: Means a regular work week of forty (40) hours, starting on Monday and ending on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof maybe worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A work day is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time maybe advanced or delayed if mutually agreed to by the interest parties. All hours worked on recognized holidays, or days observed as such, double (2) time shall be paid.

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NO. 26: Means a regular work week of forty (40) hours will start on Monday and end on Friday. The regular work day shall be either eight (8) or ten (10) hours. If a crew is prevented from working forty (40) hours Monday through Friday, or any part thereof by reason of inclement weather, Saturday or any part thereof may be worked as a make-up day at the straight time rate. Employees who are part of a regular crew on a make-up day, notwithstanding the fact that they may not have been employed the entire week, shall work Saturday at the straight time rate. A workday is to begin between 6:00 a.m. and 9:00 a.m. However, the project starting time may be advanced or delayed if mutually agreed to by the interest parties. For all time worked on recognized holidays, or days observed as such, double (2) time shall be paid.

No. 32: Means the overtime rate shall be time and one-half the regular rate for work over forty (40) hours per week. Sundays and Holidays shall be paid at double the straight time rate.

NO. 80: Means the regular workday shall consist of eight (8) consecutive hours, exclusive of a thirty (30) minute unpaid lunch period, with pay at the straight time rate. If the workday starts at 8:00 a.m., the quitting time shall be no later than 4:30 p.m. When separate crews are used, the start time may be adjusted from 6:00 AM through 9:00 AM. The start time may be further adjusted to 9:30 AM throughout the year if required by government agency or municipal ordinance. Time and one-half (1½) shall be paid after eight (8) consecutive hours Monday through Saturday. All work performed on Sundays and recognized holidays shall be paid at double (2) the hourly rate. If a crew of another trade working for the employer is receiving overtime pay, the Cement Mason crew shall receive overtime pay. The Employer has the option to schedule the work week from Monday through Thursday at ten (10) hours per day at the straight time rate of pay with all hours in excess of ten (10) hours in any one day to be paid at the applicable overtime rate. When an Employer schedules 4-10's, the Employer will not bring in any other crew for a fifth workday on the project while not calling in the normal crew that had been scheduled for that project. If the Employer elects to work 4-10's Monday through Thursday and is stopped due to inclement weather, or other conditions beyond the control of the Employer, the Employer shall have the option to work Friday at the straight time rate of pay to complete the forty (40) hours for the workweek. Shifts may be established when considered necessary by the employer. Shift hours and rates will be as follows. All shifts shall be eight (8) hours plus one-half (1/2) hour for unpaid lunch. First shift will begin at 8:00 a.m. and end at 4:30 p.m. Hours worked during the first shift will be paid at the straight time rate of pay. The second shift shall start eight hours after the start of the first shift and will be paid the straight time rate plus \$2.50 per hour premium. The third shift shall start eight hours after the start of the second shift and will be paid the straight time rate plus \$3.50 per hour premium. Shifts will be established for a minimum of three consecutive workdays. If only two shifts are worked, the Employer may regulate the start time to take maximum advantage of daylight hours.

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NO. 4: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, or observed as such, shall be paid at the double time rate of pay. When a Holiday falls on a Sunday, Monday shall be observed. No work shall be performed on Labor Day, except in case of jeopardy to life or property. This is applied to protect Labor Day.

NO. 9: All work performed on Sundays and the following recognized holidays, or the days observed as such, of New Year's Day, Decoration Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) the hourly rate plus an amount equal to the hourly Total Indicated Fringe Benefits. Whenever any such holidays fall on a Sunday, the following Monday shall be observed as a holiday.

NO. 12: All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. When one of the foregoing holidays falls on Sunday, it shall be celebrated on the following Monday. When one of the foregoing holidays falls on Saturday, it shall be celebrated on the Friday before the holiday.

NO. 16: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on Sunday, it shall be observed on the following Monday. If a holiday falls on Saturday, it shall be observed on the preceding Friday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid to the worker unless worked. If workers are required to work the above recognized holidays or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 21: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make-up day when an observed holiday occurs during the work week. Employees have the option to work that make-up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 22: The following days are recognized as holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Veterans Day, Thanksgiving Day, Christmas Day and any additional holidays which may be mutually agreed upon. Whenever any such holiday falls on a Sunday, the following Monday shall be recognized and observed as the holiday. Work performed on Sundays and holidays shall be paid at the double time rate of pay. No work shall be performed on Labor Day.

NO. 25: The following days are recognized as holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day except in case of jeopardy to work under construction. This rule is applied to protect Labor Day. When a holiday falls during the normal work week, Monday through Friday, it shall be counted as eight (8) hours toward the forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workmen unless worked. An Employer working a four (4) day, ten (10) hour schedule may use Friday as a make up day when an observed holiday occurs during the work week. Employees have the option to work that make up day. If workmen are required to work the above enumerated holidays, or days observed as such, they shall receive double (2) the regular rate of pay for such work.

NO. 31: All work performed on New Year's Day, Presidents' Day, Veterans' Day, Good Friday, Decoration Day, Fourth of July, Labor Day, Christmas Eve Day, Christmas Day, Thanksgiving Day and Day after Thanksgiving or days celebrated for the same.

SECTION 01 10 00 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by Contract Documents.
 - 2. Type of Contract.
 - 3. Work sequence.
 - 4. Work under other contracts.
 - 5. Use of premises.
 - 6. Special safety precautions associated with work.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work to be performed under this Contract is described in the agreement, Section 00 52 00. The details of the Work are shown on the Drawings and stated in the Specifications.

1.4 TYPE OF CONTRACT

- A. Project will be constructed under a single prime contract.

1.5 WORK SEQUENCE

- A. This section describes the suggested sequence of construction for the Project. The description is only a basis for the Contractor to develop a detailed sequence of construction to submit to the Engineer and Owner after Notice to Proceed and before construction starts.
 - 1. Coordinate all shutdowns and tie-ins with the Engineer and Owner. Do not interrupt active operations or tie into existing pipe lines or facilities without permission from the Owner.
 - 2. See also Section 01 35 13.

1.6 WORK UNDER OTHER CONTRACTS

- A. Owner may self perform or award separate contracts for performance of certain construction operations not covered under this contract. Those operations may be conducted simultaneously with Work under this contact.
- B. Cooperate fully with the Owner and separate contractors so that work on these contracts may be carried out smoothly, without interfering with or delaying Work under this contract.

1.7 USE OF PREMISES

- A. Observe the following in performing all work, in addition to requirements defined by the General Conditions:

1. Limit use of the premises to work within easements and right-of-ways indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
 2. Consult with the Engineer before performing any work that may damage or interfere with the normal operation of any part of the existing accessible ramp and stairs, or any part of the new construction that has been completed and turned over to the Owner.
 3. Obtain and pay for any additional storage or work areas needed for accomplishing the work under this Contract.
- B. Observe the following in performing all work, in addition to requirements defined by the General Conditions:
1. Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
 2. Consult with the Engineer before performing any work that may damage or interfere with the normal operation of any part of the existing accessible ramp and stairs, or any part of the new construction that has been completed and turned over to the Owner.
 3. Comply with and enforce the Owner's instructions regarding signs, fires, smoke, noise, odors, erosion and dust.
 4. Keep roadways and entrances serving the city hall clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.8 SPECIAL SAFETY PRECAUTIONS ASSOCIATED WITH WORK

- A. The Contractor should be alert to the fact that during removal of the existing accessible ramp and new construction that proper barricades and warning devices shall be installed incidental to the cost of the contract to provide protection of the public.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Project meetings.
 - 3. Requests for Interpretation (RFIs)

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

1.4 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at a location designated by the Owner, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within 3 days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 20 days after the Contract times start to run. Hold the conference at a location designated by Owner or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 - 1. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Preliminary progress schedule, preliminary Schedule of Values, preliminary Schedule of Submittals.
 - b. Phasing.
 - c. Critical work sequencing.
 - d. Designation of responsible personnel.

- e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for processing Applications for Payment.
 - g. Distribution of the Contract Documents.
 - h. Submittal procedures.
 - i. Preparation of Record Documents.
 - j. Use of the premises.
 - k. Responsibility for temporary facilities and controls.
 - l. Parking availability.
 - m. Office, work, and storage areas.
 - n. Equipment deliveries and priorities.
 - o. First aid.
 - p. Security.
 - q. Progress cleaning.
 - r. Working hours.
- C. Progress Meetings: Conduct progress meetings once every two weeks, on a date mutually agreed upon by the Contractor and the Engineer. Coordinate dates of meetings with preparation of monthly payment requests.
1. Attendees: In addition to representatives of Contractor, Owner and Engineer, each subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Change Orders.
 - 14) Documentation of information for monthly payment requests.
 - 15) Traffic control.

3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.4 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

- D. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
 1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Engineer.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.

- E. Hard-Copy RFIs:
 1. Identify each page of attachments with the RFI number and sequential page number.

- F. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
 1. Attachments shall be electronic files in Adobe Acrobat PDF format.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Submittals Schedule.
 - 2. Schedule of Values.
 - 3. Contractor's Construction Schedule.
 - 4. Daily construction reports.
 - 5. Material location reports.
 - 6. Field condition reports.

1.3 SUBMITTALS

- A. Submittals Schedule: Submit three copies of schedule. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Engineer's final release or approval.
- B. Schedule of Values: Submit two printed copies of Schedule of Values.
- C. Contractor's Construction Schedule: Submit two printed copies of initial schedule, one a reproducible print and one a blue- or black-line print, large enough to show entire schedule for entire construction period.
- D. Daily Construction Reports: Submit two copies at weekly intervals.
- E. Material Location Reports: Submit two copies at weekly intervals.
- F. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

1.4 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from parties involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates. Submit in accordance with General Conditions.

2.2 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with the preparation of the Contractor's Construction Schedule.

- 1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's construction schedule.
 - b. Application for Payment form.
 - c. List of subcontractors.
 - d. List of products.
 - e. List of principal suppliers and fabricators.
 - f. Schedule of submittals.
- 2. Submit the Schedule of Values to the Engineer in accordance with the General Conditions.

- B. Format and Content

- 1. Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Owner.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
- 2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:
 - a. Generic name.
 - b. Related Specification Section.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that have affected value.
 - g. Dollar value.
 - h. Percentage of Contract Price to the nearest one-hundredth percent, adjusted to total 100 percent.
- 3. Provide a breakdown of the Contract Price in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.
- 4. Round amounts off to the nearest whole dollar; the total shall equal the Contract Price.
- 5. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

6. Margins of Cost: Show line items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete including its total cost and proportionate share of general overhead and profit margin.
 - a. At the Contractor's option, temporary facilities and other major cost items, including mobilization that are not direct cost of actual work-in-place may be shown as separate line items in the Schedule of Values or distributed as general overhead expense.
7. Schedule Updating: Date and resubmit the Schedule of Values when Change Orders or Construction Change Directives result in a change in the Contract Price.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (PROGRESS SCHEDULE)

- A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within ten days after the Effective Date of the Agreement. Submit fully-developed schedule within 30 days after the Effective Date of the Agreement.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Use the same breakdown of units of the Work as indicated in the Schedule of Values.
 1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.
- C. The Contractor shall allocate the cost of the work, including labor, materials, equipment, overhead and profit, to each activity. The total of all costs shall equal the contract value. Using the cost assigned to each activity, the Contractor shall develop a Cash Flow Projection. The Projection shall be presented in graphic form depicting estimated cash drawdown in the aggregate, by month, over the life of the project.
- D. Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.
 1. Revise the schedule when, in the opinion of the Engineer, the schedule does not represent actual prosecution and progress of the work.

2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events:
 1. List of subcontractors.
 2. Approximate count of personnel.
 3. High and low temperatures and general weather conditions.
 4. Accidents.
 5. Meetings and significant decisions.
 6. Unusual events.
 7. Stoppages, delays, shortages, and losses.
 8. Emergency procedures.
 9. Orders and requests of authorities having jurisdiction.
 10. Change Orders received and implemented.
 11. Work Change Directives received.
 12. Partial Completions.

13. Substantial Completions authorized.

- B. Material Location Reports: At weekly intervals, prepare a comprehensive list of materials delivered and stored. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for fabricated materials or items.
- C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report. Submit with a request for information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 32 00

SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
- B. Related Requirements:
 - 1. Division 01 Section "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.2 INFORMATIONAL SUBMITTALS

- A. Digital Photographs: Submit image files within seven days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
 - 2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Date photograph was taken.
 - d. Description of vantage point, indicating location, direction (by compass point).

1.3 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a photographer of construction projects.

1.4 USAGE RIGHTS

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

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, with minimum size of 8 megapixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

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

- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Engineer.
- D. Preconstruction Photographs: Before commencement of construction, take photographs of Project site and surrounding areas, including existing items to remain during construction, from different vantage points, as directed by Engineer.
- E. Periodic Construction Photographs: Take photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take color photographs after date of Substantial Completion for submission as Project Record Documents. Engineer will inform photographer of desired vantage points.

END OF SECTION 01 32 33

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. Related Sections include the following:
 - 1. Division 00 Section "Standard General Conditions of the Construction Contract" for submitting applications for payment.
 - 2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
 - 3. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule, Schedule of Values, and the Submittals Schedule.
 - 4. Division 01 Section "Photographic Documentation" for submitting construction photographs.
 - 5. Division 01 Section "Quality Requirements" for submitting test and inspection reports.
 - 6. Division 01 Section "Closeout Procedures" for submitting Project Record Documents, Operation and Maintenance Manuals, and warranties.
 - 7. Divisions 02 through 49 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Engineer's responsive action.
- B. Informational Submittals: Written information that does not require Engineer's approval. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal.
1. Initial Review: Allow three weeks for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
 2. If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Allow three weeks for processing each resubmittal.
 4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- D. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Engineer.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
- E. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- F. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will return submittals, without review, received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
- G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- H. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
 - 1. Number of Copies: Submit seven (7) copies of each submittal, unless otherwise indicated. Engineer will return four copies. Mark up and retain one returned copy as a Project Record Document.
 - a. Submit three (3) copies of each submittal where selection of options, color, pattern, texture, or similar characteristics is required. Engineer will return one copy with options selected.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Manufacturer's catalog cuts.
 - e. Standard product operating and maintenance manuals.
 - f. Compliance with recognized trade association standards.
 - g. Compliance with recognized testing agency standards.
 - h. Application of testing agency labels and seals.
 - i. Notation of coordination requirements.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Schedules.
 - e. Design calculations.
 - f. Compliance with specified standards.
 - g. Notation of coordination requirements.
 - h. Notation of dimensions established by field measurement.
- D. Samples: Prepare physical units of materials or products, including the following:
 - 1. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

2. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.
 3. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
 - a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
 - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
 4. Disposition: Maintain sets of approved Samples at a location designated by the Owner, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
- E. Contractor's Construction Schedule: Comply with requirements in General Conditions and Division 1 Section "Construction Progress Documentation".
- F. Submittals Schedule: Comply with requirements in General Conditions and Division 1 Section "Construction Progress Documentation."
- G. Schedule of Values: Comply with requirements in General Conditions and Division 1 Section "Construction Progress Documentation."

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit three copies of each submittal, unless otherwise indicated. Engineer will not return copies.
 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 3. Test and Inspection Reports: Comply with requirements in Division 1 Section "Quality Requirements."
- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of engineers and owners, and other information specified.
- C. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

- E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- F. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- G. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- H. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- I. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- J. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- K. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- L. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- M. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures".
- N. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- O. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - 1. Preparation of substrates.
 - 2. Required substrate tolerances.
 - 3. Sequence of installation or erection.
 - 4. Required installation tolerances.
 - 5. Required adjustments.
 - 6. Recommendations for cleaning and protection.

- P. **Manufacturer's Field Reports:** Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- Q. **Insurance Certificates and Bonds:** Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. **Approval Stamp:** Stamp each submittal with a uniform approval stamp including a statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents. Sign and date.
1. The practice of submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings which, in the opinion of the Engineer, clearly indicate that they have not been checked by the Contractor will be considered as not complying with the intent of the Contract Documents and will be returned to the Contractor for resubmission in the proper form.

3.2 ENGINEER'S ACTION

- A. **General:** Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. **Action Submittals:** Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
1. "Approved": the work covered by the submittal may proceed within the construction schedule or sequence, provided the work complies with the requirements of the Contract Documents.
 2. "Approved as Noted": the work covered by the submittal may proceed within the construction schedule or sequence, provided the work complies with the notations or corrections on the submittal and the requirements of the Contract Documents.
 3. "Not Approved": do not proceed with the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay.

4. "Work May Proceed": The Engineer will only use "Work May Proceed" when the submittal specifically requests permission to initiate work, such as when construction sequencing is critical. A detailed construction sequence for the work covered by the submittal must be included with such a request. "Work May Proceed" means the work covered by the submittal may proceed as set forth in the sequence submitted.
 5. "Work May Not Proceed": The Engineer will only use "Work May Not Proceed" when the submittal specifically requests permission to initiate work, such as when construction sequencing is critical. A detailed construction sequence for the work covered by the submittal must be included with such a request. "Work May Not Proceed" means the work covered by the submittal may not proceed at this time.
 6. "Resubmit": revise the submittal according to the notations or corrections; resubmit without delay.
 7. "Do Not Resubmit": a revision need not be submitted. However, all notations or corrections made on the submittal must be complied with.
 8. "Submit Final Certified": When the Engineer marks a submittal "Submit Final Certified," prepare and submit a final, dimensionally certified drawing including any notations or corrections made; submit without delay.
 9. "Review Not Required": When the Engineer marks a submittal "Review Not Required," the submittal has not been reviewed by the engineer. The engineer will not review submittals made for record purposes only or submittals not required by the Contract Documents.
- C. Informational Submittals: Engineer will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
 - 1. Divisions 02 through 46 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.
- D. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- J. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience.
- B. Reports: Prepare and submit certified written reports that include the following:
 - 1. Date of issue.
 - 2. Project title.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Ambient conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

- C. **Installer Qualifications:** A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- D. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. **Testing Agency Qualifications:** An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.
- G. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- H. **Mockups:** Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Engineer.
 - 2. Notify Engineer seven days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Engineer's approval of mockups before starting work, fabrication, or construction.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless otherwise indicated.

1.6 QUALITY CONTROL

- A. **Contractor Responsibilities:** Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

- C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
 - 5. Do not perform any duties of Contractor.
- E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field-curing of test samples.
 - 5. Security and protection for samples and for testing and inspecting equipment at a location designated by the Owner.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Price. Allow other entities to use temporary services and facilities without cost, including, but not limited to Engineer, testing agencies, and authorities having jurisdiction.
- B. Water Service: Pay water service use charges for water used by all entities for construction operations.
- C. Electric Power Service: Pay electric power service use charges for electricity used by all entities for construction operations.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Engineer. Provide materials suitable for use intended.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- I. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line for each field office.

1. Provide additional telephone lines for the following:
 - a. Provide a dedicated telephone line for each facsimile machine and computer in each field office.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
 2. Maintain support facilities until Final Completion.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.
 1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- C. Parking: Provide temporary parking areas for construction personnel.
- D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.
- E. Project Identification and Temporary Signs: Provide Project identification and other signs per the requirements of authorities having jurisdiction. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 01 Section "Execution Requirements" for progress cleaning requirements.
 1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
 2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
 - 1. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- C. Storm Water Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rains.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- F. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas from fumes and noise.
- G. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Remove all temporary facilities.
 - 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 01 50 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
 - 1. Division 01 Section "Closeout Procedures" for submitting warranties for contract closeout.
 - 2. Divisions 02 through 46 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 QUALITY ASSURANCE

- A. For certain products, the specifications require the manufacturer to have a record of satisfactory operation with the product for a specified period of time. The submission of a bond or deposit, for the same specified period of time, shall be allowed as a substitute for the record of satisfactory operation.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
 - 1. Schedule delivery to minimize long-term storage and to prevent overcrowding of construction spaces at a location designated by the Owner.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to location designated by the Owner in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 - 5. Store products to allow for inspection and measurement of quantity or counting of units.
 - 6. Store materials in a manner that will not endanger structures.
 - 7. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 8. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 9. Protect stored products from damage.

1.5 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Progress cleaning.
5. Starting and adjusting.
6. Protection of installed construction.
7. Correction of the Work.

- B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
4. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is registered in Missouri and who is experienced in providing required land-surveying services.
- B. Engineer Qualifications: Engage an engineer of the discipline required, licensed in Missouri, to perform required engineering services.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.

- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

3.2 PREPARATION

- A. Existing Utility Interruptions: Do not interrupt utilities serving facilities unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Engineer not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Engineer's written permission.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

- D. Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

3.4 FIELD ENGINEERING

- A. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F .
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

1.3 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Engineer's opinion, reduce the building's and structure's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.5 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials unless otherwise noted in these documents. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

END OF SECTION 01 73 29

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Project Record Documents.
 - 3. Operation and Maintenance Manuals.
 - 4. Warranties.
 - 5. Demonstration and training.
 - 6. Final cleaning.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5. Submit record drawings, damage or settlement surveys, property surveys, and similar final record information.
 - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 - 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 8. Complete startup testing of systems.
 - 9. Submit test/adjust/balance records.
 - 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 11. Advise Owner of changeover in heat and other utilities.
 - 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- B. Inspection: Submit a written request for inspection in accordance with the General Conditions.

1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
 - 1. Instruct Owner's personnel in adjustment, and maintenance of products, and systems.

2. Inspection: Submit a written request for final inspection for acceptance, in accordance with the General Conditions.

1.5 PROJECT RECORD DOCUMENTS

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.
- B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.
 1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 3. Mark important additional information that was either shown schematically or omitted from original Drawings.
 4. Note Work Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
 5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
- C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, and materials furnished, including substitutions and product options selected.
 3. Note related Change Orders and Record Drawings where applicable.

1.6 OPERATION AND MAINTENANCE (O&M) MANUALS

- A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment. Include operation and maintenance data required in individual Specification Sections and as follows:

1. Operation Data:

- a. Emergency instructions and procedures.
- b. System, subsystem, and equipment descriptions, including operating standards, and nameplate data.
- c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
- d. Description of controls and sequence of operations.
- e. Outline piping and wiring/control diagrams.
- f. Troubleshooting instructions.

2. Maintenance Data:

- a. Manufacturer's information, including list of spare parts.
- b. Name, address, and telephone number of Installer or supplier.
- c. Maintenance procedures, and materials/lubricants/special tools required.
- d. Maintenance and service schedules for preventive and routine maintenance.
- e. Maintenance record forms.
- f. Sources of spare parts and maintenance materials.
- g. Copies of maintenance service agreements.
- h. Copies of warranties and bonds.

B. Preliminary Submittal: Submit two preliminary copies of each O&M Manual for review and approval at the same time as the shop drawings for the equipment or the system. The Engineer will retain one and will return the other marked with action taken and corrections or modifications required.

C. Final Submittal: Submit four copies each O&M Manual for review and approval. The final O&M Manual shall be furnished prior to making application for payment exceeding 60 percent of the construction price.

1.7 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 DEMONSTRATION AND TRAINING

- A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of the system.

- 1. Provide instructors experienced in operation and maintenance procedures.

2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
 3. Schedule training with Owner with at least seven days advance notice.
 4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.
- B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:
1. System design and operational
 2. Review of documentation.
 3. Operations.
 4. Adjustments.
 5. Troubleshooting.
 6. Maintenance.
 7. Repair.
- C. Videotape instruction: The Owner reserves the right to videotape all formal and informal pre and post-startup training and/or instruction sessions, in both the classroom and “hands-on” equipment instructions provided by the manufacturer’s representative. The manufacturer may review and reasonably edit the videotapes at the sole expense of said manufacturer, for correctness and completeness. However, the tapes shall be returned to the Owner, in a condition to the Owner, before the applicable equipment system will be accepted by the Owner.
1. In lieu of the above, and with the prior approval of the Owner, the manufacturer may provide, at the expense of the said manufacturer, “canned” videotapes on the maintenance and operation of the equipment system in question (must be same model, size, etc., as equipment being furnished under this Contract). “Canned” videotapes are not a substitute for training of plant personnel “in person”. The Contract Price shall include “hands-on” training with manufacturers’ representatives and any “canned” videos available from the manufacturer on the specific equipment.
 2. All videotapes used or produced shall become the property of the Owner.

3.2 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and anti-pollution regulations.
- B. Cleaning: Clean each surface or unit to condition expected in an average cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Final Completion for Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.

- f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Remove labels that are not permanent.
 - j. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - k. Leave Project clean.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

SECTION 01 78 36 – WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Document, including manufacturers' standard warranties on products and special warranties.
 - 1. Refer to the General Conditions for terms of the Contractor's general warranty and guarantee.
 - 2. General closeout requirements are included in Section "Closeout Procedures".
 - 3. 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 02 through 46.
 - 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. 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.

1.3 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. 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.
- B. 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.
- C. 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 life.

D. 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, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. 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.

E. The Owner reserves the right to refuse to accept Work for the Project 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.

1.5 SUBMITTALS

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

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

B. 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 Engineer for approval prior to final execution.

1. Refer to individual Section of Divisions 02 through 46 for specific content requirements, and particular requirements for submittal of special warranties.

C. Form of Submittal: At Final Completion, submit copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION 01 78 36

SECTION 02 41 19 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

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

- B. Related Sections include the following:

1. Division 01 Section "Summary" for use of premises, and phasing requirements.
2. Division 01 Section "Photographic Documentation" for preconstruction photographs taken before selective demolition operations.
3. Division 01 Section "Cutting and Patching" for cutting and patching procedures.
4. Division 31 Section "Site Clearing" for site clearing and removal of above- and below grade improvements.
5. Division 31 Section "Earth Moving"

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 00 Submittals.
- B. The CONTRACTOR shall submit a written request, to include a detailed demolition procedure, to the CITY for approval at least 10 days before demolition is started. The demolition procedure shall include a detailed description of the methods and equipment to be used for each operation and the sequence of work. The demolition procedures shall provide for safe conduct of work, protection of the property, which is to remain undisturbed, and coordination with other work or operation which may be in progress.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.

1.6 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.7 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

3.2 UTILITY SERVICES AND MECHANICAL

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- C. Dust tight partitions shall be erected to protect existing facilities from dust while wrecking is in progress and until such time as demolition is complete.
- D. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 5. Maintain adequate ventilation when using cutting torches.
 - 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 - 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 9. Dispose of demolished items and materials promptly.
- B. Removed and Salvaged Items:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.

- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- D. The CONTRACTOR shall be responsible for removing all existing service connections to the buildings or site and permanently plugging the pipes where required in accordance with requirements of the utility companies concerned.
- E. The CONTRACTOR will be responsible for any damage caused to other structures, and shall be held liable for any and all repairs, replacement of parts or renovations required to restore any structure, portion of structure, equipment or items, not intended for demolition. The CONTRACTOR shall restore any damaged facilities to their condition prior to demolition provided the damage was result of the demolition. If the CONTRACTOR does not repair any such damage immediately, or if the repairs are not suitable to the CITY, the CITY reserves the right to have such repairs made by another party and deduct the cost of required repairs from money due CONTRACTOR.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
- B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials and equipment from Project site and legally dispose of them.
 - 1. Do not allow demolished materials and equipment to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials and equipment off Owner's property and legally dispose of them.

3.7 CLEANING

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

END OF SECTION 02 41 19

SECTION 033000 - CONCRETE WORK

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 WORK SUMMARY

- A. The extent of concrete work is as described in this Section and as shown on the Drawings.

1.3 QUALITY ASSURANCE

- A. Codes and Standards: Comply with ACI 318-02 "Building Code Requirements for Reinforced Concrete" and the Codes and Manuals of Standard Practice in the following list. Provide a copy of the ACI 318 Code on the Construction Site. The Recommended Practices listed provide guidance for attainment of specified performance requirements.
 1. ACI 211.1 Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
 2. ACI 214 Recommended Practice for Evaluation of Strength Test Results of Concrete.
 3. ACI 302.1R Guide for Concrete Floor and Slab Construction.
 4. ACI 304R Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
 5. ACI 304.2R Placing Concrete by Pumping Methods.
 6. ACI 305R Hot Weather Concreting.
 7. ACI 306R Cold Weather Concreting.
 8. ACI 347R Guide to Formwork for Concrete.
 9. ACI SP66 ACI Detailing Manual.
 10. CRSI-MSP-1 Concrete Reinforcing Steel Institute, Manual of Standard Practice, including supplements.
 11. AWS D1.4 American Welding Society" Structural Welding Code - Reinforcing Steel".
- B. Tolerances for Concrete Construction and Materials: Conform to ACI 117 Standard Specification Tolerances for Concrete Construction and Materials, unless otherwise specified herein.
- C. Contractor Qualifications: Contractor must have a minimum of 5 years experience in forming, placing and finishing concrete structures of a like size and nature. Contractor must have superintendents or foremen qualified to supervise the crews required for the type and size of project to be constructed.
- D. Certification: When the Contract Documents require certification that materials meet specified requirements, the Owner shall be entitled to rely upon the accuracy and completeness of the certification.

1.4 CONCRETE TESTING

- A. General: Concrete materials and operations will be tested and inspected as work progresses. Failure to detect any defective work or material shall not, in any way, prevent later rejection when such defect is discovered.

B. Contractor's Responsibilities

1. Allow testing service and Engineer free access to material stockpiles, facilities for batching, mixing and placing concrete and the work in progress.
2. Furnish labor and equipment to assist testing service personnel and Engineer in obtaining and handling test samples.
3. Provide and maintain, for the sole use of the testing service, facilities of satisfactory capacity and construction meeting requirements of ASTM C31, for the first 24-hour storage of concrete test specimens made during construction.
4. At least 24 hours in advance of placing concrete in the structure, notify the Engineer and testing laboratory personnel of the date, time, location in the structure and quantity of concrete to be placed.
5. Employ and pay for the services of a testing laboratory to design specified types of concrete mixes when concrete proportions are required to be established by laboratory trial batches, to provide testing associated with Contractor-initiated changes in previously established concrete mixes, and to prepare associated reports which include data required in the Paragraph: PROPORTIONING AND DESIGN OF MIXES. Select a laboratory for designing concrete mixes that is different from the laboratory performing tests during construction.
6. Provide for all testing necessary to control the specified quality of concrete placed in the structure and to certify conformance to ASTM C94 requirements for uniformity of concrete. Any additional testing required to assure quality control shall be paid by Contractor.
7. Pay for additional tests of in-place concrete made by the Engineer when test results indicate specified concrete strengths and other qualities have not been attained in the work.
8. Employ and pay a qualified independent testing agency for testing services required for "Sampling and Testing Concrete During Construction to Demonstrate General Compliance with Specified Properties" and submit to the Engineer and Contractor a report of the tests.

C. Engineer will review testing service laboratories recommended by Contractor and notify Contractor of acceptance or of an alternative selection.

D. Testing Laboratory Requirements: Laboratories engaged to perform testing services and prepare mix designs shall meet the requirements of ASTM E329. Laboratories providing the testing service shall provide equipment and materials required for sampling testing operations specified standards. Laboratories shall furnish Engineer a copy of current inspection report to ensure compliance with ASTM E329. Laboratories shall employ technicians certified by the American Concrete Institute for all sampling and testing of fresh concrete. Laboratories must be approved by Engineer.

E. Sampling and Testing During Construction to Demonstrate General Compliance with Specified Properties: The testing laboratory will be required to sample and test fresh concrete used in the work to determine its acceptability as required by ACI 318 and to demonstrate general conformance with specified properties as follows:

1. Sampling Fresh Concrete: ASTM C172.
2. Slump: ASTM C143; one test for each set of compressive strength test specimens, and whenever consistency of concrete appears to vary.
 - a. When super-plasticizers are added at the site, testing lab will make slump tests from each concrete load before adding superplasticizer and after super-plasticizer has been properly mixed into the fresh concrete.
3. Air Content: One test for each set of compressive strength specimens.
 - a. ASTM C231, pressure method for normal weight concrete.
4. Concrete Temperature: ASTM C1064; hourly test of concrete temperature when air temperature is 40 degrees F and below, and when 80 degrees F and above; and when each set of compression test specimens is made.

5. Concrete Uniformity: ASTM C94 (Annex A1); verification of conformance to Table A1.1 requirements at start of work and then thereafter when mixing or agitating equipment is changed or mix consistency appears to vary.
 6. Compressive Strength Specimens: ASTM C31; one set of four standard cylinders for each 100 cu yds or fraction thereof, of each concrete type placed in any one day, or for each 5000 sq ft of surface area placed, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens.
 7. Compressive Strength Tests: ASTM C39; one specimen tested at 7 days, two at 28 days, and one retained in reserve for later testing if required.
 - a. When frequency of testing will provide less than five strength tests for a given class of concrete, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
- F. Laboratory Reports: The laboratory performing "Testing During Construction to Demonstrate Compliance with Specified Properties" is required to submit, simultaneously to the Engineer and Contractor, reports of the tests on the same day they are made. These reports must include the following information, as applicable:
1. Project name and structure.
 2. Concrete placement date.
 3. Testing service name.
 4. Technician's name(s) and date(s) of certification.
 5. Concrete mix type.
 6. Location(s) in structure(s) represented by sample tested.
 7. Specified design compressive strength.
 8. Actual compressive breaking strength and type of break for 7- and 28-day compressive strength tests.
 9. Measured slump.
 10. Air content.
 11. Concrete temperature as required.
 12. Unit weight of plastic concrete and unit weight of hardened concrete as required.
- G. Additional Testing: Make additional tests of in-place concrete as directed by Engineer when test results indicate specified concrete strengths and other qualities have not been attained in the work. Conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods acceptable to the Engineer.
- H. Special Inspection
1. Contractor shall engage a qualified person to observe the work for conformance with design drawings and specifications. Contractor shall allow inspector free access to work in progress. This Inspector will be required to furnish reports to the Contractor and the Engineer as follows:
 - a. Placement of reinforcing steel, including coupler devices.
 - b. Placement of concrete and procurement of test specimens by testing service technicians.
 2. Inspector Qualifications: ACI Certified Level II Concrete Construction Inspector or a Registered Professional Engineer with prior experience in similar construction or other person similarly qualified and suitable to the Engineer of Record.

1.5 SUBMITTALS

- A. Make submittals in duplicate (one reproducible and one non-reproducible) according to Specification Section 01330 and as herein specified.

- B. **Product Data:** Submit for review manufacturer's product data that indicates conformance with specified requirements and application and installation instructions for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, grouts, gels, adhesive, bonding agents, waterstops, joint systems, curing compounds, sealers, joint filler, sealant, moisture barrier, and others as requested by Engineer. For each admixture proposed for a given mix, the manufacturer of that admixture must provide written certification of compatibility with each other admixture proposed for use in the same mix. For each admixture, provide written confirmation of chloride ion content from each admixture manufacturer prior to submittal of Concrete Mix Reports. For floor finish materials, include instructions for post-application cleanup and maintenance.
- C. **Mill Analysis:** Submit mill analysis of reinforcing steel and cement. Indicate heat numbers on the mill analysis and on the shipping tickets so that steel on the site can be positively identified.
- D. **Shop Drawings - Preparation:** Prepare and check shop drawings showing complete information for formwork, reinforcing, anchor bolts and embedded material to meet requirements of the Contract Documents. Contract Documents may not be reproduced for use as part of the shop drawings unless approved in writing by the Structural Engineer of record.
1. **Shop Drawings, Reinforcing:** Prepare and submit Drawings and Schedules to illustrate fabrication, placement, and support of concrete reinforcement. Comply with CRSI Manual of Standard Practice, ACI SP66, and additional requirements specified herein. Include bar bending diagrams and bar lists. Provide placement drawings, which show reinforcement and its support by using, beam elevations, slab or mat placement plans for each layer of reinforcing, wall elevations, and column or pier schedules and details. Develop details to show proper fit and arrangement of reinforcing. Show locations of bar splices, splice lengths, and bar cutoff points on placement drawings. Show clear concrete cover over reinforcing. Include type and locations of supports required to maintain position of reinforcement.
 2. **Shop Drawings, Anchor Bolts and Embedded Material:** Prepare and submit shop drawings to illustrate fabrication and installation of anchor bolts and embedded material required for anchorage or connection of items as detailed or specified in the Contract Documents. Coordinate with bolts or anchors provided by the structural steel.
- E. **Shop Drawings - Submittal:** Contractor shall review and approve the submittals before transmitting to the Engineer. Submit shop drawings in phases to expedite review and release for fabrication and construction. The Contractor's review indicates his verification of and responsibility for:
1. Reinforcing, anchor bolts and embedded material - Quality and Strength.
 2. Field measurements.
 3. Construction Criteria.
 4. Required Performance and Conformance to Design Criteria.
 5. Interface coordination with other construction.
 6. Quantities.
 7. Accuracy and dimensioning.
 8. Location of anchor bolts and embedded material.
 9. Verification that shop drawings have been checked.
 10. Verification that submittal includes all information required by Contract Documents.
- F. **Shop Drawings - Owner's Review:** Engineer will review submitted shop drawings and apply review stamp for conformance to Contract Documents and general design features as follows:
1. Material designation and description.
 2. Member size and configuration.
 3. Reinforcing bars-number and size.
 4. Anchor bolt types and sizes.
 5. General control dimensions.

- G. Should it become evident that the shop drawings have been submitted to the Owner with signs of not having been properly checked, they will be returned without review, and will be classified as a "non-submittal".
- H. Deviations from Contract Documents will not be reviewed unless a request in writing is made by the Contractor for approval of the deviation before shop drawing submittal.
- I. Shop Drawing Changes: Review on resubmission will cover only designated changes on the previous submittal or those clearly identified by encirclement.
- J. When corrections or changes are noted on the shop drawings during review and the Contractor feels these are beyond the scope of the Contract Documents and will result in an extra cost to the Owner, he shall call these items to the attention of the Engineer for written authorization before proceeding with these corrections or changes.
- K. Concrete Mix Reports: Submit reports for each concrete mix type that contains the information required in Paragraph: PROPORTIONING AND DESIGN OF MIXES at least 15 days before placing concrete.
Material Certificates: At least 15 days prior to submitting concrete mix reports, provide material
- L. certificates signed by manufacturer and Contractor, certifying that each material item listed in "PART 2 - PRODUCTS" complies with, or exceeds, specified requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver manufactured materials in original, unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, curing time, and mixing instructions.
- B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.
- C. Delivery of Ready-Mix Concrete: Each truck entering the Construction Site shall have tickets certifying the mix type, quantity and weight of each ingredient, water added and water in aggregates must be included.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. General: Use materials suitable for exterior exposure and which have the strength to produce required tolerances and that do not exceed the roughness of dressed lumber or U.S. Product Standard PS-1 "B-B Concrete Form Plywood", unless otherwise shown or approved by the Engineer.
- B. Form Facing in Contact with Concrete: Wood, wood products, metal or plastics capable of producing the specified finish, and that will not react with fresh concrete to cause loss of strength or durability in hardened concrete. Do not use materials that will stain concrete surfaces exposed to view.
- C. Form Release Agents: Commercial formulation form-release agent compounds that will not bond with, stain or adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

1. Submit certification that the form release agent is compatible with admixtures and applied finishes.
- D. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties, designed to prevent form deflection, and that will not spall concrete surfaces upon removal. Wire ties or common bolts will not be permitted.
 1. Where concrete is to be left exposed, provide ties with removable cones 1-1/2 inches deep and not more than 1-1/4 inches in diameter leaving no metal closer than 1-1/2 inches from finished concrete surface, unless otherwise shown.
 2. Provide ties with a water seal washer for retaining walls, basement walls, pit walls and other liquid containing structures.

2.2 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A615, Grade 60, deformed, unless otherwise indicated. Shop fabricate all reinforcement to the fullest extent practical. Limit field fabrication to uncoated bars, sizes 4 and smaller.
- B. Steel Wire for Securing Reinforcing Bars and Embedded Items: ASTM A82, plain, cold-drawn, 16-1/2 gauge or heavier steel.
- C. Supports for Reinforcement: Provide supports for reinforcement as recommended by CRSI "Manual of Standard Practice".
 1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
 2. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports which are all plastic or which have legs that are plastic protected, complying with CRSI Class 1 - Maximum Protection. Select color of plastic resin to match color of concrete.
- D. Threaded Mechanical Connectors for Reinforcing
 1. Lenton Threaded Couplers by ERICO Products Co. that provide 125 percent of yield strength of the bar.
 2. Dowel Bar or Coupler Splicer System, as applicable, by Richmond Screw Anchor Company, that provides 125 percent of yield strength of the bar.
 3. Approved equal
- E. Dowel Bar Substitution: Richmond Dowel Bar Substitution by Richmond Screw Anchor Co., Inc., or approved equal. Provide protective plastic cap or plug for each dowel.

2.3 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type I.
 1. Use one brand of cement throughout project, unless otherwise acceptable to the Engineer.
- B. Normal Weight Aggregates: Provide non-alkali-reactive aggregates of the types and sizes specified from a single, State-approved source for each concrete mix design.
 1. Fine Aggregate: Natural sand conforming to ASTM C33. Do not use sand containing coal and lignite in excess of 0.25 percent of total sample weight.
 2. Coarse Aggregate: Gravel or crushed stone conforming to ASTM C33. For aggregate size, see Paragraph: REQUIRED CONCRETE MIX TYPES.
- C. Water: Potable.

- D. Air-Entraining Admixture: ASTM C260; formulation to suit project.
 - 1. When an air-entraining admixture is used with a super-plasticizer, submit written confirmation of the compatibility with superplasticizer.
- E. Water-Reducing Admixture: ASTM C494, Type A.
- F. Water-Reducing and Retarding Admixtures: ASTM C494, Type D.
 - 1. When water-reducing and -retarding admixtures are used with superplasticizers, submit written certification of compatibility with superplasticizer.
- G. Non-Chloride, Non-Corrosive Accelerators: ASTM C494, Type C or E; chloride ion content not to exceed 100 ppm; Euco "Accelguard 80", by The Euclid Chemical Company; "Polarset Accelerator", by Grace Construction Products; or "Pozzutec 20", by Master Builders (or approved equal).
- H. High Range Water Reducing Admixture (Superplasticizers); Site Added: ASTM C494, Type F; "Eucon 37", by The Euclid Chemical Co.; "Sikament 86", by Sika Chemical Corp.; or "Melment", by Gifford Hill (or approved equal).
- I. Prohibited Admixtures: Calcium chloride or admixtures containing more than 0.3 percent chloride ions are not permitted. Provide written confirmation of the chloride ion content from each admixture manufacturer prior to submittal of Concrete Mix Reports.
- J. Mutual Compatibility: For each admixture proposed for a given concrete mix, provide written certification of compatibility with each other admixture proposed for that same mix.

2.4 RELATED MATERIALS

- A. Waterstops: Provide centerbulb-type PVC waterstops complying with Corps of Engineers CRD-C572 of the sizes shown at construction joints and other joints; 3/8-inch minimum thickness.
- B. Penetrating Sealer: Water repelling colored coating for concrete exposed to view; resistant to salts, de-icer chemicals, moisture and acids; capable of 1/8-inch minimum penetration; suitable for horizontal and vertical applications; and possessing the following characteristics:
 - 1. "No Scaling" after 50 cycles as compared to untreated concrete when tested by ASTM C672.
 - 2. 90 percent minimum reduction in chloride ion penetration at 1/2 inch compared to untreated concrete by AASHTO T259 nonabrasion resistance of chloride ion penetration test.
 - 3. 92 percent reduction in chloride ingress by FHWA/RD-81/119 Rapid Permeability Test compared to untreated concrete.
 - 4. 93 percent reduction in chloride ion absorption by NCHRP 244, Southern Exposure Test procedures compared to untreated concrete.
 - 5. No appreciable effect on skid resistance compared to untreated concrete when tested by ASTM E303.
 - 6. Submit certified independent test results, which demonstrate conformance to the above requirements. Provide a 5-year warranty against water penetration through sound concrete and concrete spalling or damage from freeze-thaw cycles or penetration of chlorides.
 - 7. Color to match/blend with existing stone on city hall. Color to be approved prior to application.
 - 8. Material shall be Concrete Technology Incorporated or equal.
- C. Moisture-Retaining Cover for Concrete Curing: One of the following complying with ASTM C171:
 - 1. Waterproof sheet material reinforced in both directions.
 - 2. Polyethylene film - opaque white, .006-inch (6 mils) thick.
 - 3. Polyethylene-coated burlap.

- D. Absorptive Cover: Burlap cloth made from jute or kenaf weighing approximately 9 oz per sq yd complying with AASHTO M182, Class 3.
- E. Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B. Compound shall form a uniform continuous coherent film that will not check, crack, or peel.
- F. Bonding Agent: Film-forming, freeze-thaw resistant material suitable for exterior or interior exposure and brush or spray application.
 - 1. "Everbond", by L&M Construction Chemicals.
 - 2. "Euco Weld", by Euclid Chemical.
 - 3. "Weldcrete", by Larsen Products Corp.
 - 4. Approved equal.
- G. Epoxy Adhesive: A two-component compound, 100 percent solids, 100 percent reactive and suitable for use on dry or damp surfaces.
 - 1. "Euco Epoxy No. 460MV (for normal conditions) or No. 620MV (for cold applications)", by The Euclid Chemical Company.
 - 2. "Sikadur 32 Hi-Mod", by Sika Chemical Corporation.
 - 3. "Permunitite", by L&M Construction Chemicals.
 - 4. Approved equal.
- H. Smooth Steel Dowels: ASTM A276, Type 304 stainless steel; provide either round or square as shown on the drawings; include 1/8" compressible filler material around one end and on sides for square dowels.
- I. Expansion Anchors: Stainless steel; "Trubolt Wedge Anchor" by Ramset Fastening Systems; "Standard Kwik Bolt III" by Hilti Fastening Systems; or, "Maxi-Bolt" by Drillco Devices (or approved equal).
- J. Moisture Barrier: 8-mil polyethylene sheet.
- K. Asphaltic Tape: Double sided Asphalt Impregnated Tape, 1-1/2" wide suitable for bonding moisture barrier laps.
- L. Structural Non-shrink Grout: Premixed, prepackaged, pretested, non-metallic, non-corrosive, non-staining product containing selected silica sands, Portland cement, shrinkage compensating agents, plasticizing and water-reducing agents.
 - 1. 5000 psi minimum compressive strength at 7 days when tested by ASTM C109. Shrinkage limited to 0.00 inch in plastic state when tested in accordance with ASTM C827 and in hardened state when tested in accordance with Corps of Engineers CRD-C621.
 - a. "Five Star Grout" by Five Star Products, Inc.
 - b. "Masterflow 928" by Master Builders.
 - c. "Crystex" by L&M Construction
 - d. Approved equal.

2.5 DOWEL GROUTING

- A. Drilled Dowels:
 - 1. Horizontal Application: "SIKADUR 32 HI-MOD" by SIKA Corporation.
 - 2. Vertical or Overhead Application: "SIKADUR 31 HI-MOD" by SIKA Corporation.
 - 3. Approved equal.

2.6 PROPORTIONING AND DESIGN OF MIXES

- A. General: Using materials that will be used in the work, establish proportions of cement, coarse and fine aggregates, water, and admixtures to produce the properties specified for each concrete mix type based on methods described in ACI 318. Substantiate attainment of all specified properties by designated ASTM test methods. Provide concrete that has 28-day compressive strengths that exceed the specified design strength (f_c) in accordance with ACI 318. Use admixtures in accordance with manufacturer's directions. Use amounts of water-reducing admixture that will permit the use of 5 to 10 percent less water to produce the specified slump. The slumps specified are the slumps required at the point of discharge from delivery trucks.
- B. Superplasticized Concrete Mixes: Proportion mixes that will contain superplasticizers by the ACI 318 Laboratory Trial Batch Method to meet the performance required for the specific mix type, except proportion mixes to have no more than 3-inch slump before superplasticizer is added, unless otherwise specified. Select superplasticizer dosage rate to provide slumps no greater than 7 inches, unless otherwise specified. Follow manufacturer's recommendations for dosage rates, mixing time, and compatibility with other admixtures.
 - 1. Obtain instructions from the manufacturer of the superplasticizer admixture relative to the quantity of superplasticizer necessary to produce 5-inch, 6-inch, 7-inch and 8-inch slumps and adjustments in dosages to maintain desired slumps and setting times with varying air temperature and humidity and concrete temperature.
 - 2. When not specifically required herein, superplasticizers may be used in the specified mix types upon written approval from the Engineer.
- C. Mix Reports: Provide written concrete mix reports that contain the following information for each mix type:
 - 1. Mix type and intended location in the structure and the method of concrete placement for which the mix is proportioned.
 - 2. Coarse aggregate source of supply, type rock, maximum size and gradation, and dry-rodded weight per cubic foot. Sand source of supply, gradation, and fineness modulus.
 - 3. Tests of aggregates, or certificates demonstrating compliance with specified requirements ASTM C33.
 - 4. Brand and type of cement.
 - 5. Dry weights of cement, sand and coarse aggregate per cu yd of concrete.
 - 6. Amounts of each admixture per cu yd of concrete; include manufacturer's instructions and certificates of compatibility.
 - 7. Water-cement ratio.
 - 8. Slump - ASTM C143.
 - 9. Mix consistency and workability for anticipated conditions of placement.
 - 10. Entrained air content - ASTM C231.
 - 11. Standard deviation for concrete production facility and associated strength required greater than the design strength, f_c . Determine standard deviation from concrete produced and tested within the 12 months preceding first concrete placement. Refer to ACI 318-99, Paragraph 5.3.1.
 - 12. For proportions established by laboratory trial batches, provide the curve establishing the relationship between water-cement ratio and compressive strength required by ACI 318-99, Paragraph 5.3.3.2, and compressive strength developed at 7 days and 28 days from three compressive strength tests, made in accordance with ASTM C39 and ASTM C192, for each mix type and each 7- and 28-day test.
 - 13. For proportions established by field experience, provide, for each mix type, compressive strengths developed at 7 and 28 days from thirty compressive strength tests made by a testing laboratory meeting specified requirements. Mixes proportioned on this basis will be considered for acceptance only if the specimens tested are from mixes that are identical to the mixes that will be used in the work for this Project.

D. Required Concrete Mix Types and Qualities: Use the following mix types at the locations indicated below and where indicated in other specification sections by reference:

1. Mix R1 - All concrete work unless specified otherwise.

$f_c = 4000$ psi; normal weight; Type I cement; coarse aggregate size 57, 1-inch maximum; air entrainment 5-1/2 percent; water-reducing admixture; slump 4 inches, water/cementitious material ratio not to exceed 0.45.

2.7 CONCRETE MIXING

A. General: Use ready-mix concrete produced at facilities meeting certification requirements of the National Ready-Mix Concrete Association, and that complies with requirements specified, and ASTM C94. Add each admixture separately to the mix unless otherwise recommended by admixture manufacturers. Provide delivery tickets, which conform to ASTM C94 and includes readings of revolution counter at the first addition of water and type, brand, and batch weight of each material. Do not add water to the mix after batching, unless permitted by the Engineer.

B. Adding Superplasticizer: Comply with manufacturer's printed recommendations. Add Type F superplasticizers at construction site.

PART 3 - EXECUTION

3.1 GENERAL

A. Limit concrete placements to 50 feet in any direction, unless otherwise directed by the Engineer. Submit schedule of concrete placements and locations of construction joints when requesting review of reinforcing steel submittals. Allow minimum 7 days curing between adjacent placements, unless otherwise directed by the Engineer. Construction joint locations must be approved by the Design Engineer.

B. Slab Slopes: Place formwork and finish concrete to provide slab surfaces that meet the elevations and grades necessary to provide complete drainage. Immediately after curing slab, verify by a slab survey that proper slab grades have been provided and certify in writing to the Engineer that required grades have been achieved within allowable tolerances. Make corrections or replacements necessary if required grades are not met. All such corrections must have Engineer's approval prior to implementation.

3.2 FORMS

A. Provide, erect, support, brace and maintain formwork and shoring to safely support vertical and lateral loads caused by concrete placement and other loads that might be applied until such loads can be supported by the hardened concrete structure. Evaluate the effects of varying fluid pressures created on formwork by concretes of various slumps used in the work. Construct and adjust formwork so concrete members and structures are of correct size, shape, alignment, elevation and position in the finished structure. Refer to recommendations in ACI 347. Construct formwork to produce concrete work within tolerances suggested in ACI 347.

B. Use selected materials to obtain required finishes. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.

C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Kerf wood inserts for forming keyways, reglets, and recesses, to allow easy removal.

- D. Make provisions in formwork to permit removal of debris from interior form spaces. Locate temporary openings in forms at inconspicuous locations.
- E. Chamfer exposed corners and edges as indicated on Drawings, using chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- F. Provide groove strip on form at control joint lines and construction joints used in lieu of control joints. Provide groove strip at horizontal joints resulting from concrete placement limits.
- G. Use form ties in arrangements, numbers and sizes to resist lateral pressures exerted by fresh concrete and to prevent form deflection.
- H. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms.
- I. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris before concrete is placed. Retighten forms and bracing after concrete placement if required to eliminate mortar leaks and maintain proper alignment.

3.3 FABRICATING AND PLACING REINFORCEMENT

- A. Fabricate and place reinforcement as shown on approved shop drawings and in accordance with ACI 318. Bend bars cold using an approved mandrel. Use splices only as required and shown on shop drawings.
- B. Comply with Concrete Reinforcing Steel Institute's "Recommended Practice for Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
- C. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials, which reduce or destroy bond with concrete.
- D. Accurately position and support reinforcement in positions shown; use metal chairs, runners, bolsters, spacers, and hangers, as required. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Reinforcing couplers may be used in place of lap splices shown on the Drawings at Contractor's option, and only with the approval of the Design Engineer of Record.

3.4 JOINTS

- A. General: Locate and construct control, construction, and isolation joints as shown and detailed on Drawings. Where joints are not located on the Drawings, follow the requirements given herein. Protect joints from intrusion of foreign matter.
 - 1. Groove slab at all control and construction joints. Grooving may be done by saw cutting for slab-on-grade construction, within 4 to 12 hours after the slab has been placed and finished. Make joint 1/4-inch wide and 1/4 of the slab thickness deep with a minimum of 1 inch.
- B. Construction Joints: Place construction joints perpendicular to the main reinforcement. Continue reinforcement across construction joints, unless otherwise shown or indicated herein. Limit the length between construction joints in walls and grade beams to 50 feet. Limit slab areas between construction joints to 50 feet in any direction.
 - 1. Walls: Provide 1-1/2-inch deep keyway in walls. Make keyway width equal to 1/3 of total width.

- C. Locate and install construction joints, which are not shown, so as not to impair strength and appearance of the structure, and as acceptable to the Design Engineer. Where construction joints are located off a control joint line, continue all reinforcing through the joint. Clean the previously formed surface to remove laitance; and, roughened to an amplitude of 1/4 inch, unless keyed. Wet or coat interface surface with a bonding agent before placing adjacent concrete.
- D. Control Joints: Provide control joints in walls to allow shrinkage to occur at fixed increments of length. Allow shrinkage cracking at these joints by grooving of the concrete face or surface and reduction of reinforcing through the joint.
- E. Joints in Form Cast Members: Locate joints in slabs and beams cast in forms above grade to maintain integrity of the structure and meet requirements of ACI 318. Joint locations must be approved by the Design Engineer.

3.5 JOINT MATERIALS AND MOISTURE BARRIERS

- A. Waterstops: Provide waterstops in construction joints and control joints where indicated on Drawings to form a continuous diaphragm in each joint. Fabricate field joints in waterstops in accordance with manufacturer's printed instructions and use manufacturer's prefabricated sections at corners and "T" intersections. Support and protect exposed waterstops during progress of work. Cut end wall forms to pass the waterstop. Do not fold waterstop against form. The completed joint with waterstop shall provide a watertight bulkhead in the wall or slab.
- B. Coordinate the installation of moisture barriers with placement of forms and reinforcing steel.
- C. Install moisture barrier as detailed on the drawings and provide a minimum 6-inch overlap at joints. Carefully fit moisture barrier around service openings. Bond laps together with asphaltic tape.

3.6 INSTALLATION OF EMBEDDED ITEMS

- A. General: Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of items. Temporarily fill voids in sleeves with readily removable material to prevent entry of concrete.
- B. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units sufficiently strong to support screed equipment and methods.
- C. Aluminum Embedded Items: Paint all aluminum surfaces in contact with concrete with a bituminous paint complying with SSPC Paint 12 - Cold Applied Asphaltic Mastic, 1/8-inch minimum thickness.
- D. Install dovetail anchor slots in concrete structure as indicated.

3.7 PREPARATION OF FORM SURFACES

- A. Coat contact surfaces of form with a form-release agent before reinforcement is placed.
- B. Apply release agent as specified in manufacturer's directions. Do not allow excess release agent to accumulate in forms or to come into contact with concrete surfaces against which fresh concrete will be placed.
- C. Coat steel forms with a nonstaining, rust-preventative form oil or otherwise protect against rusting.

3.8 PREPLACEMENT PREPARATION AND INSPECTION

- A. Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting embedded items. Moisten wood forms immediately before placing concrete where form coatings are not used, except during cold weather. Moisten final grade immediately before placing concrete for slab-on-grade, except where slab is cast directly on moisture barrier.
- B. Verify immediately before placing flatwork concrete, that all reinforcing is secure and properly positioned; replace as necessary any support chairs found to be damaged.

3.9 CONCRETE PLACEMENT

- A. General: Comply with requirements of ACI 318. Do not use concrete which becomes nonplastic and unworkable, or does not meet the specified mix properties, or which has been contaminated by foreign materials. Do not use retempered concrete.
- B. Mixes with Superplasticizer: Do not place superplasticized concrete with slumps greater than 7 inches. If super-plasticized concrete slump exceeds 7 inches, the concrete may be allowed to sit in a nonrotating mixer up to 10 minutes to allow slump adjustment. Greater lengths of sitting time will be allowed only when approved by the Engineer. If the slump does not attain its specified slump limits after the allowed setting time, the concrete may not be used in the work, unless otherwise approved by the Engineer.
 - 1. When superplasticizer is added at site, do not use concrete batches that arrive at the site with slumps greater than 3 inches. Add site-added superplasticizer to the concrete mix at the point of delivery through approved truck-mounted dispensers and mix approximately 4 or 5 minutes at mixing speed after introduction of superplasticizer. Do not use more than two doses of admixture. Follow manufacturer's recommendations for re-dosing.
- C. Conveying Equipment: Keep interior surfaces of conveying equipment free of hardened concrete, debris, water, snow, ice and other deleterious materials. Do not use aluminum for piping or chuting materials. Use 4-inch minimum pipe diameter for conveying pumped concrete. Do not pump concrete used for slabs-on-grade without superplasticizer unless approved by the Engineer.
- D. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
 - 1. Bring slab surfaces to correct level and strike off; take care to assure positive drainage of flatwork exposed to weather, especially when slopes are 1/4 inch per foot or less. Use bull float, darby or highway straightedge to level surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 - 2. Maintain reinforcing and waterstops in proper position during concrete placement operations.
- E. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints. Do not drop concrete freely more than 60 inches for unexposed work, nor more than 36 inches in exposed work. Comply with ACI 303R and ACI 304R.
 - 1. To initiate all wall pours and at any horizontal joint in walls, spread a 1-inch to 2-inch thick layer of cement mortar over dampened concrete surface. This mortar shall be a mixture of cement, sand, and water in the same proportions as used in the concrete but with all coarse aggregate omitted. Place fresh concrete before cement mortar has attained its initial set.

- F. Consolidation: Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping to provide concrete members free of honeycomb, rock pockets and voids. Do not insert vibrators into lower layers of concrete that have begun to set.
- G. Cold Weather Placing: Protect concrete work from physical damage or reduced strength, which could be caused by frost, freezing actions, or low temperatures.
 1. When air temperature has fallen to or is expected to fall below 40 degrees F, uniformly heat water and aggregates as necessary before mixing to obtain a concrete mixture temperature conforming to Table 3.1 of ACI 306 Report and maintain protection for minimum times as noted in Table 5.3 of ACI 306 Report. The rate of cooling should be gradual and should not exceed 40 degrees F per 24-hour following the cessation of heat application.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Use only the specified non-chloride, non-corrosive accelerator in accordance with manufacturer's recommendations when early set times are needed.
 4. Adjust superplasticizer dosage rate as may be necessary during cold weather to produce concrete with satisfactory finishing qualities.
- H. Hot Weather Placing: Protect concrete work from physical damage when hot weather conditions exist that would seriously impair quality and strength of concrete. A shorter mixing and delivery time than specified in ASTM C94 may be required during hot weather.
 1. Cool ingredients before mixing as necessary to maintain concrete temperature at time of placement below 90 degrees F (32 degrees C). Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing.
 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
 3. Wet forms thoroughly before placing concrete.
 4. During dry, windy weather, erect windbreaks and/or sunshades and protect concrete surface immediately after finishing, using fog sprays to prevent evaporation before curing is applied.
 5. Use the water-reducing retarding admixture Type D, as required by placing and/or climatic conditions.

3.10 FINISH OF FORMED SURFACES

- A. Rough Form Finish: Use for formed concrete surfaces not exposed-to-view in the finish work or hidden by other construction, unless otherwise indicated. Provide concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4-inch in height removed.
- B. Smooth Form Finish: Use for formed concrete surfaces exposed-to-view, or that are to receive a coating or covering material applied directly to concrete, such as waterproofing, painting or other similar system. Provide as-cast concrete surface obtained with form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas. Completely remove fins or other projections. Fill all air pockets and voids over 3/8-inch diameter with sand-cement paste. Grind smooth all form offsets or fin marks. Refer to Plans for form liner profile and dimensions.
- C. Patching: Patch holes left by form ties and surface defects less than 1-1/2 inches deep and 16 sq inches in area with a sand-cement grout. Before placing grout, remove all loose material and apply bonding agent to remaining sound concrete surfaces. Finish patch to match surrounding concrete. Cure patched areas by methods applicable for curing surrounding concrete.

1. Blend white and grey cements to produce grouts that match color of surrounding concrete exposed to view.
 2. Patch or repair defective areas of concrete greater than 1-1/2 inches deep or 16 sq inches in area only with materials and methods that provide the strength and durability of surrounding sound concrete and that have been approved by the Engineer.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets and unformed surfaces occurring adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 MONOLITHIC SLAB FINISHES

- A. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified.
1. After screeding and consolidating concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared and when concrete has stiffened sufficiently to permit floating. Finish slabs to a uniform granular textured surface having a section composite plane tolerance of FF25FL17 Statistical Average Value (SAV), as defined by ASTM E1155. Slope surfaces uniformly as shown on the Plans.
- B. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, paint or other thin film finish coating system.
1. After floating, steel-trowel slab surface to a smooth, even, impervious finish free from trowel marks. Give slab surface a second steel troweling to a burnished finish, uniform in texture and appearance, having a section composite plane tolerance of FF30FL20 Statistical Average Value (SAV) for slab on grade and FF25 Statistical Average Value (SAV) for elevated slab, as defined by ASTM E1155.
- C. Sealer Finish; Slabs Exposed to View: Apply penetrating sealer to concrete slabs exposed to view in accordance with manufacturer's instructions. Apply penetrating sealer to floors which are at least 28 days old and which have been thoroughly cured and are allowed to air dry.

3.12 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying, excessive cold or hot temperatures, rapid temperature changes, and physical damage.
- B. Start curing as soon as free water has disappeared from concrete surface after placing and finishing. Continue curing for at least 7 days. Avoid rapid drying at end of curing period.
- C. Curing Methods: Cure concrete using one or more of the following methods as required for grade and supported slabs:
1. Keep concrete surface continuously wet by covering with water.
 2. Apply continuous water-fog spray.
 3. Cover concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 6-inch lap over adjacent absorptive covers.
 4. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape. When this method is used in combination with Method 3, the moisture-retaining sheet is placed over the absorptive cover after being saturated with water.

5. Apply membrane-forming curing compound to concrete surfaces as soon as final finishing operations are complete (within 2 hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Prohibit pedestrian and vehicular traffic and other sources of abrasion for at least 72 hours after compound application. Maintain continuity of coating and repair damage during curing period. Do not use membrane-curing compounds on surfaces which are to be covered with coating material applied directly to concrete, waterproofing, dampproofing, membrane roofing, flooring, painting, and other coatings and finish materials, unless otherwise acceptable to Engineer.
- D. Curing Slabs-on-Grade: Use curing Method 1, or Methods 2 and 3 simultaneously, or Methods 3 and 4 simultaneously, for a period of 7 days.
 - E. Curing Supported Slabs: Use Methods 3, 4 or 5, as applicable. Do not use Method 3 for concrete placed on permanent metal decks.
 - F. Curing Formed Surfaces: Cure formed concrete surfaces, including undersides of beams, supported slabs and other similar surfaces, by keeping forms in place, or by the other curing methods as specified for slabs. Shade forms exposed to sun when air temperature exceeds 80 degrees F or keep forms cooled by continuous wetting. If forms are removed prior to full length of curing period, continue curing by Method 5.

3.13 SHORES AND SUPPORTS

- A. Provide shores, supports and bracing for formwork that will perform the following functions:
 1. Maintain forms in their required positions during concrete placement.
 2. Prevent overstressing permanent structural components.
 3. Safely support formwork, concrete, construction and wind loads.
 4. Permit vertical adjustments to correct for formwork deflections and settlement during concrete placement.
- B. Provide temporary bases for shoring and supports that limit settlements to 1/2 inch and that protects the permanent structure at shoring or support bearing points.

3.14 REMOVAL OF SHORING, SUPPORTS AND FORMS

- A. Do not remove shoring, supports or forms until the concrete structure has acquired sufficient strength to support its own weight and the loads imposed on it.
- B. Carefully remove shoring, supports, forms and bulkheads to prevent spalling concrete surfaces. Remove all form materials from the concrete structure.

3.15 REMOVAL OF FORMS

- A. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.
- B. Formwork supporting weight of concrete, such as beam soffits, slabs and other structural elements, may not be removed in less than 14 days and until concrete has attained minimum design compressive strength. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.

- C. Form facing material may be removed 4 days after placement if, and only if, shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

3.16 RESHORING

- A. Reshore concrete elements where forms are removed prior to the specified time period. Do not permit elements to deflect or accept loads during form stripping or reshoring. Forms on columns, walls, or other load-bearing members may be stripped after 2 days if loads are not applied to the members. After forms are removed, slabs and beams over 10 feet in span and cantilevers over 4 feet shall be reshored for the remainder of the specified time period in accordance with Paragraph: "Removal of Forms". Perform reshoring operations to prevent subjecting concrete members to overloads, eccentric loading, or reverse bending. Reshoring elements shall have the same load-carrying capabilities as original shoring and shall be spaced similar to original shoring. Firmly secure and brace reshoring elements to provide solid bearing and support.

3.17 RE-USE OF FORMS

- A. Clean and repair surfaces of forms to be re-used in work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable for exposed surfaces. Apply new form coating compound as specified for new formwork. Store plastic coated forms and plastic form liners away from direct sunlight.

3.18 MISCELLANEOUS CONCRETE ITEMS

- A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-trowelling surfaces to a hard, dense finish with corners, intersections and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations with a trowelled finish, as shown on Drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.
- D. Expansion Anchors: Install expansion anchors as recommended by manufacturer and with sufficient embedment to develop the yield strength of the anchors.

3.19 CONCRETE REPAIRS

- A. Submit repair procedures, including materials and methods, to Engineer for approval.

END OF SECTION 03310

SECTION 04 70 00 - MANUFACTURED MASONRY

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes: Manufactured stone veneer, and application materials.
- B. Related Sections:
- C. Alternates:
 - 1. This specification is for the material for Alternate 1.

1.02 REFERENCES

- A. American Concrete Institute (ACI).
- B. American Society for Testing and Materials (ASTM):
 - 1. ASTM C 39, Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - 2. ASTM C 177, Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
 - 3. ASTM C 192, Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory.
 - 4. ASTM C 270, Standard Specification for Mortar for Unit Masonry.
 - 5. ASTM D 226, Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- C. International Code Council (ICC):
 - 1. ES Report.
- D. Masonry Standards Joint Committee (MSJC) of The Masonry Society.
- E. Underwriters Laboratories (UL):
 - 1. Classification File Number.
 - 2. UL 723, Standard for Safety for Surface Burning Characteristics of Building Materials.

1.03 SUBMITTALS

- A. Reference Section 01 33 00 Submittal Procedures; submit following items:
 - 1. Product Data: Manufactured masonry and application materials including mortar color charts, and water resistive barrier.
 - 2. Samples: Panel containing full-size samples of specified manufactured masonry showing full range of colors and textures complete with specified mortar.
 - a. Actual size of masonry sample approximately 12 by 12 inches (300 by 300 mm).
 - 3. Quality Assurance/Control Submittals:
 - a. Qualifications:
 - 1) Proof of manufacturer qualifications.
 - 2) Proof of installer qualifications.
 - b. Certificates: ICC-ES Report.
 - c. Test Reports for physical properties.
 - d. Manufacturer's Installation Instructions.

- B. Closeout Submittals: Reference Section 01 78 00 Closeout Submittals; submit following items:
 - 1. Maintenance Instructions.
 - 2. Special Warranties.

1.04 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer Qualifications:
 - a. Minimum five years experience in producing manufactured masonry.
 - b. Member of following organizations:
 - 1) MSJC.
 - 2) ACI.
 - 3) ASTM.
 - 2. Installer Qualifications: Company with documented experience in installation of manufactured masonry including minimum 5 projects within 400 mile radius of this Project.
- B. Certifications:
 - 1. Current ICC-ES Report.
 - 2. UL: Classification File Number.
- C. Field Samples: Provide in a location selected by Engineer showing representative sample of installed product including penetration and termination details, corner detail, and mortar color and tooling.
 - 1. Reference Section 01 45 00 Quality Control.
 - 2. Minimum Size: 4 by 4 feet (1200 by 1200 mm)
 - 3. Approved field samples may remain as part of completed Work.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Reference Section 01 66 00 Product Storage and Handling Requirements.
- B. Follow manufacturer's instructions.
- C. Store moisture-sensitive materials in weather protected enclosures.

1.06 PROJECT/SITE CONDITIONS

- A. Environmental Requirements: Maintain materials and ambient temperature in area of installation at minimum 40 degrees F (4 degrees C) prior to, during, and for 48 hours following installation.

1.07 WARRANTY

- A. Special Warranty: Provide manufacturer's standard limited warranty against defects in manufacturing for a period of 50 years following date of Final Acceptance.

1.08 MAINTENANCE

- A. Extra Materials: Furnish extra manufactured stone material in a variety of shapes and sizes in quantity equal to three percent of the installed stone.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Boral Stone Products LLC
Norse Building Products
El Dorado Stone
Earthwork Stone
- B. Substitutions: Or Approved Equal
- C. Manufactured Masonry Physical Properties:
 - 1. Compressive Strength: ASTM C 192 and ASTM C 39, 1800 psi (12.4 MPa)
 - 2. Bond Between Stone Unit, Type S Mortar, and Backing: ASTM C 482, 50 psi (345 kPa).
 - 3. Thermal Resistance: ASTM C 177, R-factor, 0.355 per inch (25.4 mm) of thickness.
 - 4. Freeze/Thaw: ASTM C 67, 50 cycles, no disintegration and less than 3 percent weight loss.
 - 5. Fire Hazard Test, UL 723:
 - a. Flame spread: 0.
 - b. Smoke Development: 0.
 - 6. Maximum Veneer Unit Weight: 15 psf (73 kg/m²).

2.03 RELATED MATERIALS

- A. Water Resistive Barrier: No. 15, Type I, asphalt saturated felt, ASTM D 226
- B. Metal Lath: 2.5 lb (1.4 kg/m²) galvanized expanded metal lath, 18 (1.3 mm) gauge woven wire mesh, or 3.4 lb (1.8 kg/m²) galvanized expanded rib lath.
- C. Fasteners:
 - 1. Into Wood Studs: Minimum 1/8 inch (25 mm) shank diameter galvanized nails or minimum 3/4 inch (19 mm) crown staples of sufficient length to penetrate 1 inch (25 mm) minimum into the stud.
 - 2. Into Metal Studs: Minimum 7/16 inch (11.1 mm) head diameter, corrosion-resistant, self-drilling, self tapping, pancake head screws of sufficient length to penetrate 3/8 inch (10 mm) minimum into the stud.
- D. Mortar: Premixed Type N, Type S or mortar mixed using components and proportions following manufactured masonry manufacturer's installation instructions. Comply with ASTM C 270.
 - 1. Mortar Color: Iron oxide pigments.
- E. Weep screed as required for installation over framed construction.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates upon which manufactured masonry will be installed.
- B. Coordinate with responsible entity to correct unsatisfactory conditions.
- C. Commencement of work by installer is acceptance of substrate conditions.

3.02 PREPARATION

- A. Protection: Prevent work from occurring on the opposite of walls to which manufactured masonry is applied during and for 48 hours following installation of the manufactured masonry.
- B. Surface Preparation: Follow manufacturer's instructions designated below for the appropriate type of manufactured masonry and substrate.

3.03 INSTALLATION

- A. Install Cultured Stone products in accordance with manufacturer's Cultured Stone installation instructions using grouted joints.
- B. Install architectural trim products in accordance with manufacturer's Cultured Stone installation instructions.
- C. Install/Apply Related Materials specified above in accordance with type of substrate and manufactured masonry manufacturer's installation instructions.

3.04 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Provide periodic site visits, each of approximately one hours duration.

3.05 CLEANING

- A. Reference Section 01 74 00 Cleaning and Waste Management.
- B. Clean manufactured masonry in accordance with manufacturer's installation instructions.

3.06 PROTECTION

- A. Protect finished work from rain during and for 48 hours following installation.
- B. Protect finished work from damage during remainder of construction period.

END OF SECTION 04 70 00

SECTION 05 52 13 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Aluminum pipe and tube railings shall be used for all structures.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design railings, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance: Railings shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ ft. applied in any direction.
 - b. Concentrated load of 200 lbf applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
- D. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 SUBMITTALS

- A. Product Data: For the following:
 - 1. Manufacturer's product lines of mechanically connected railings.
 - 2. Railing brackets.
 - 3. Grout, anchoring cement, and paint products.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of railing from single source from single manufacturer.
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

1.7 COORDINATION AND SCHEDULING

- A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Aluminum Pipe and Tube Railings:
 - a. Blum, Julius & Co., Inc.
 - b. Braun, J. G., Company; a division of the Wagner Companies.
 - c. Kee Industrial Products, Inc.
 - d. Superior Aluminum Products, Inc.
 - e. Thompson Fabricating, LLC.
 - f. Tri Tech, Inc.
 - g. Tubular Specialties Manufacturing, Inc.
 - h. Wagner, R & B, Inc.; a division of the Wagner Companies.

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

2.3 ALUMINUM

- A. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.

B. Extruded Structural Pipe and Round Tubing: ASTM B 429/B 429M, Alloy 6063-T6.

1. Provide Standard Weight (Schedule 40) pipe, unless otherwise indicated.

C. Drawn Seamless Tubing: ASTM B 210, Alloy 6063-T832.

D. Plate and Sheet: ASTM B 209, Alloy 6061-T6.

E. Die and Hand Forgings: ASTM B 247, Alloy 6061-T6.

F. Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

2.4 FASTENERS

A. General: Provide the following:

1. Hot-Dip Galvanized Railings: Type 304 stainless-steel or hot-dip zinc-coated steel fasteners complying with ASTM A 153/A 153M or ASTM F 2329 for zinc coating.

2. Aluminum Railings: Type 304 or Type 316 stainless-steel fasteners.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

C. Fasteners for Interconnecting Railing Components:

1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless exposed fasteners are unavoidable or are the standard fastening method for railings indicated.

D. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

2.5 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.

C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

E. Non-shrink, Non-metallic Grout: Factory-packaged, non-staining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.6 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with either welded or non-welded connections unless otherwise indicated.
- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove flux immediately.
 - 4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- I. Non-welded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
- J. Form changes in direction by bending as follows:
 - 1. By bending or by inserting prefabricated elbow fittings.
- K. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- L. Close exposed ends of railing members with prefabricated end fittings.
- M. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.
- N. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.

- O. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.
- P. For railing posts set in concrete, provide stainless-steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with metal plate forming bottom closure.
- Q. Toe Boards: Provide toe boards at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

2.7 FINISHES, GENERAL

- A. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.8 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
 - 1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 - 2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 - 3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- C. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.2 RAILING CONNECTIONS

- A. Non-welded Connections: Use mechanical joints for permanently connecting railing components. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.
- B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.

- C. Expansion Joints: Install expansion joints not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to one side, and locate joint within 6 inches of post.

3.3 ANCHORING POSTS

- A. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Leave anchorage joint exposed with 1/8-inch buildup, sloped away from post.

3.4 ATTACHING RAILINGS

- A. Anchor railing ends at walls with round flanges anchored to wall construction and welded to railing ends or connected to railing ends using non-welded connections.
- B. Anchor railing ends to metal surfaces with flanges bolted to metal surfaces. and welded to railing ends or connected to railing ends using non-welded connections.
- C. Attach railings to wall with wall brackets. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
 - 1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
 - 2. Locate brackets at spacing required to support structural loads.
- D. Secure wall brackets and railing end flanges to building construction as follows:
 - 1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts. Grout hollow masonry units solid at connection locations.

3.5 ADJUSTING AND CLEANING

- A. Clean aluminum by washing thoroughly with clean water and soap and rinsing with clean water.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.6 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

END OF SECTION 05 52 13

SECTION 14 42 00 - COMMERCIAL VERTICAL LIFT

PART 1 - GENERAL

1.1 SUMMARY

- A. Furnish and install commercial vertical platform lift as designed by manufacturer, to be Ameriglide Hercules II 750 or equivalent as shown on drawings and attached.

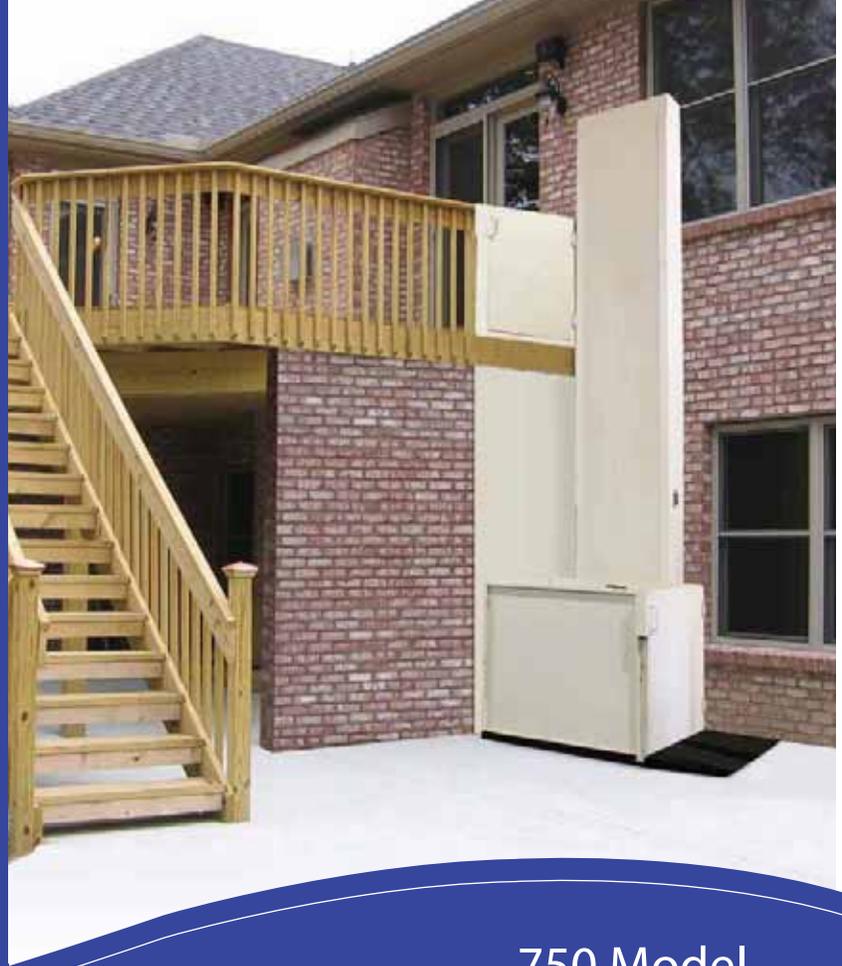
1.2 SYSTEMS INCLUDES

- A. Vertical Lift w/ 750 lb capacity minimum.
- B. 77" Maximum Lift Height
- C. Tower Orientation on Left
- D. AC Powered
- E. Platform Type: 42" x 60" Straight Thru
- F. Platform Gate: Left Swing 42" Wide Straight Thru Platform Gate with Interlock
- G. Platform Controls: Paddle Controls with Emergency Stop Button and Emergency Stop Alarm with Lighted Button
- H. Platform Options: Solid Platform with Safety Pan, Inside Grab Bar, and 42" High Side Walls
- I. Ramp Type: Fixed Ramp
- J. Landing Controls: Call/Send Control Station
- K. Landing Gate: Left Swing 42" Wide Landing Gate with Interlock & Call/Send Control
- L. Accessories, such as anchor bolts, etc for a complete operable system.

1.3 SUBMITTALS

- A. Shop drawings and installation guide for approval before ordering lift.

END OF SECTION 14 42 00



750 Model

hercules II

Residential & Commercial Vertical Platform Lifts



"We're everywhere you need to go."



Hercules II 750 Residential Platform Lift Features

Lifting Heights	4', 6', 8', 10', 12', 14'
Rated Load	750 lbs
Drive	Belt driven ball screw / 90 VDC ½ hp motor
Power Supply	115 VAC – 15 amp grounded circuit
Control Circuit	24 VDC
Platform	36" x 54" with 42" high guard panels, grab bar and fixed ramp Optional: 36" x 60", 42" x 54", and 42" x 60" Straight thru, 90°, and same-side access configurations available
Footprint	50" x 54"
Speed	10 FPM
Controls	Constant pressure rocker switch with emergency stop (key switch optional)
Manual Lowering	Device provided
Safety Design Standards	ASME A18.1, Section 5 – Private Residence Vertical Platform Lifts CSA B44.1 / ASME 17.5 – Elevator and Escalator Electrical Equipment
Safety Features	Safety pan, final limit, ball nut safety backup, belt monitor and non-skid surface
Warranty	2-Year parts

Hercules II 750 Commercial Platform Lift Features

Lifting Heights	4', 6', 8', 10', 12', 14'
Rated Load	750 lbs
Drive	Belt driven ball screw / 90 VDC ½ hp motor
Power Supply	115 VAC – 20 Amp grounded circuit
Control Circuit	24 VDC
Platform	36" x 54" with 42" high guard panels, grab bar and fixed ramp Optional: 36" x 60", 42" x 54", and 42" x 60" Straight thru, 90°, and same-side access configurations available
Footprint	50" x 54"
Speed	10 FPM
Controls	Constant pressure rocker switch with emergency stop (key switch optional)
Manual Lowering	Device provided
Safety Design Standards	ASME A18.1, Section 2 – Vertical Platform Lifts CSA B44.1 / ASME 17.5 – Elevator and Escalator Electrical Equipment
Safety Features	Safety pan, final limit, ball nut safety backup, belt monitor and non-skid surface
Warranty	2-Year parts
Extras	Emergency stop alarm and two call-send controls
Other Options	Fire-rated doors, automatic door openers, and portable package

MADE IN USA



AmeriGlide Vertical Platform Lifts are designed to meet ANSI/ASME A18.1 Performance Safety Standards when properly equipped. While AmeriGlide Vertical Platform Lifts meet national standards, it is imperative to check State and Local code requirements before installing to ensure compliance. All State and Local compliance is the responsibility of the purchaser. Some states may require fees for site preparation and permits. AmeriGlide Vertical Platform Lifts should only be installed by a certified, professional AmeriGlide installer. If the Vertical Platform Lift is installed by any other means, the purchaser and installer assume responsibility for issues that may arise involving improper installation.



AmeriGlide Hercules II 750 Residential and Commercial Vertical Platform Lifts

AmeriGlide's Hercules II 750 Residential and Commercial Vertical Platform Lifts are a safe, smooth and economical solution to the barriers porches and other elevation changes can create in and around a home.

Designed from the ground up to be as cost-efficient as possible, the Hercules II 750 Residential Vertical Platform Lifts are priced to be competitive with shorter units, but built to accommodate most residential applications with ease.

Hercules II 750 Commercial Vertical Platform Lifts are manufactured to meet or exceed the most current safety design standards. The entire Hercules line was designed with precision and care to be an incredibly high quality, code compliant access solution.

As with all AmeriGlide products, the Hercules II 750 Residential and Commercial Vertical Platform Lifts are simple to install, easy to operate and virtually maintenance free for both indoor and outdoor use.



Why Choose an AmeriGlide Vertical Platform Lift?

Safety

Your safety is important to us. All AmeriGlide Vertical Platform Lifts (VPL) are ETL listed. They are not only built to meet ANSI (American National Standards Institute) and ASME (American Society of Mechanical Engineers) safety standards, but are also tested to exceed these standards. All lifts come standard with several safety options, including an emergency stop button and a solid, bottom safety pan which will immediately stop the lift if it comes into contact with any object below it.

Durability

AmeriGlide's lifts are built to last. To ensure these VPLs are not only safe, but also reliable, they have undergone rigorous testing.

Wind: The Commercial VPL design was recently determined to be able to withstand hurricane force winds of up to 130 mph - a requirement for coastal regions in the US.* The quality and the features of this lift might blow you away, but you can rest assured that the wind won't.

Rain: AmeriGlide's VPLs can be used indoors and outdoors, so we put them to the test. A little rain won't hurt your lift. Its weatherproof controls are designed to withstand the elements.

Temperature: These lifts were run continuously, at full weight capacity, for several cycles to assure that there is no possibility of the components overheating due to extended use. This means there is no need to worry about using your lift too often; it's built to work whenever you need it.**

Strength: Testing of these lifts mandated loading the drive system with 3 tons without failing. In addition, the mechanical structure was loaded with over 5,000 lbs to test every aspect of the welding, stresses in the material, and assembly of the unit. You can ride with confidence, knowing your AmeriGlide lift is built to be tough!***

Made in America: All of AmeriGlide's Vertical Platform Lifts are manufactured with care right here in the USA!

*Lift must be secured with appropriate brackets to an acceptable base. **DC unit performance is dependent upon battery life. ***Do not exceed the recommended lifting capacity of your lift.

Serviceability

The electrical box and motor are housed on the top of the lift. Not only does this keep them safe if there's flooding, it also means there's no need to open the tower to service the lift!

Safety sensors along bottom of lift stop it immediately if obstacle is encountered.



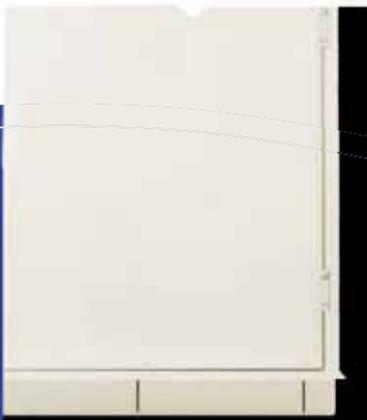
Automatic folding ramp provides easy entry when lift is lowered and additional stability when lift is raised.



Constant pressure rocker switch and emergency stop button for simple and safe operation.



Key lock for controls ▼

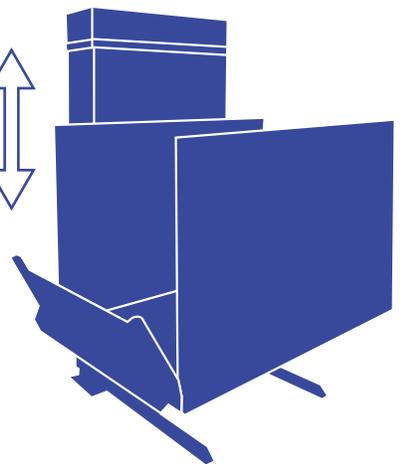


▲ Top landing gate with mechanical interlock that releases only when platform reaches the top of landing

4' to 14'
Lifting
Heights



Battery Power Available



VERTICAL PLATFORM LIFT OPTIONAL FEATURES



◀ Wall mounted call/send controls



hercules II

Vertical Platform Lift

750



Installation & Owner's Manual

Models:

AMGHERC750-4

AMGHERC750-6

AMGHERC750-8

AMGHERC750-10

AMGHERC750-12

AMGHERC750-14

This manual has been provided to assist you with lift installation and operation. For further assistance please contact your authorized AmeriGlide dealer or AmeriGlide's Technical Support Department.

Tel: 866-378-6648
Fax: 816-537-0641

DEALER

SERIAL NO

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Using the Manual

This manual will provide step by step instructions on how to install and operate your lift. Read and understand the entire manual before beginning to install the lift.

If you have any questions, contact technical service at 1-866-378-6648

When You Receive the Lift

- Check the lift for shipping damage. If you see any damage contact the freight carrier to file a damage claim.
- Verify the products match that described on the packing list attached to the exterior packaging.
- Verify the contents of the package match that shown below to the right.

Specifications

Payload Capacity	750 lbs
Vertical Travel	53" – 171"
Foot Print	VARIES
Platform Size	36" x 54" / 36" x 60" / 42" x 54" / 42" x 60"
Input Voltage	115vac - 20a
Control Voltage	24vac or 24vdc
Platform Speed	10 ft/min
Motor	1/2hp-90vdc or 1/2hp-24vdc



Safety

- Read all instructions in this manual before installing or operating the lift.
- Do not exceed the maximum payload capacity of 750 lbs.
- Do not ride on the lift until it is anchored in place.
- This product is designed only for lifting people and wheel chairs. Do not use it for any other purpose.
- Always wear eye protection while installing or servicing this product.
- Always disconnect this product from the electrical source before servicing it.
- Only use the fasteners supplied with this lift.
- Do not wear loose clothing or jewelry when working on this product.
- Do not disable any safety equipment or switches supplied with this lift.
- Stay away from all drive train components while the lift is operating.

Code Requirements

Your lift has been designed to meet ASME A18.1 section 2 and CSA B44/ASME A17.5, with the addition of certain options. Code requirements for Vertical Platform lifts vary depending on location. It is the installers responsibility to contact their local code enforcement office and determine all of the regulations they are subject to. You must do this before installing the Vertical Platform Lift.

Site Requirements

- The lift will require a 115vac 20amp grounded circuit.
- Outdoor Installations will require a GFI protected circuit.
- Only install the lift on a 4" thick , level 3,500 psi reinforced concrete slab.
- Foot Print varies depending on platform size and options.

Required tools

- 1/2" Hammer Drill
- 3/8" Masonry Drill Bit
- Appliance Dolly
- Hammer
- Level
- Measuring Tape
- Socket Wrench Set

Required materials

- 4 Floor anchors

AmeriGlide recommends securing the lift using our Anchor Kit. If you purchase you own floor anchors they must use 3/8" bolts and have a minimum tensile strength of 6000 LBS.

Preparing to Install the Lift

Final Site Inspection

Verify the surface the lift will mount to is smooth and level. This surface must be made from 3,500 psi reinforced concrete with a minimum thickness of 4".

Verify that there is enough space for the lift's foot print. Be sure to include space necessary for platform.

Caution: Verify that the running clearance around the lift complies with any codes for your area.

- The horizontal gap between the edge of the platform and the upper landing must be no less than 3/8" and no greater than 3/4".
- The horizontal gap between the guard panel and any wall or barrier must be no less than 2" and no greater than 3".
- Verify that sufficient head room exists above the lift. The lift will require 6' 8" of clearance above the platform floor when the lift is at the upper landing.

Warning: The area between the floor where the lift is mounted and the top landing must be covered by a smooth vertical fascia. This is to eliminate any pinch points between the platform and landing.

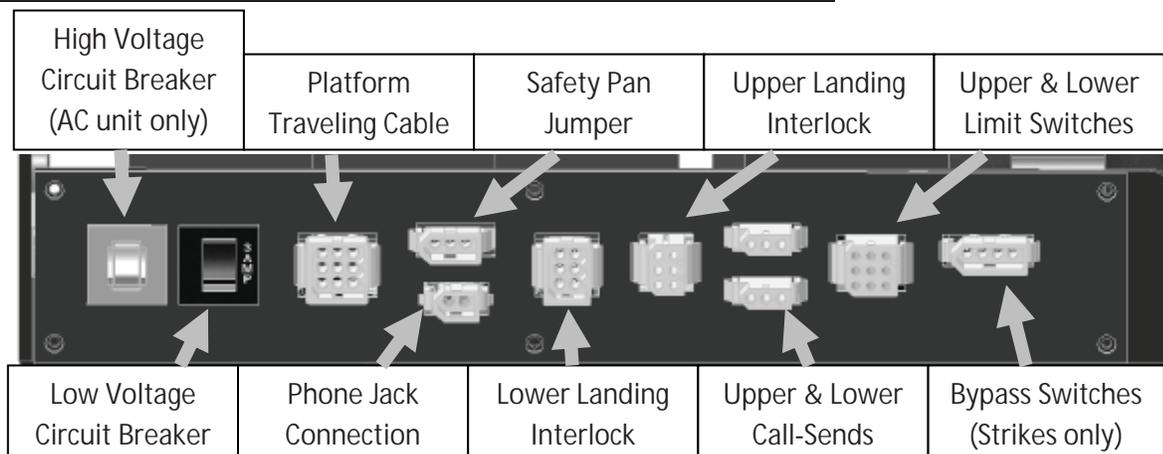
Connecting to Electricity

The lift will require a 115 VAC 20 amp grounded electrical circuit.

Depending on local codes, this connection may need to be routed in electrical conduit and hard-wired.

Warning: Do not ride on the lift until it has been anchored in place.

Controller Harness Connections



Installing the Platform

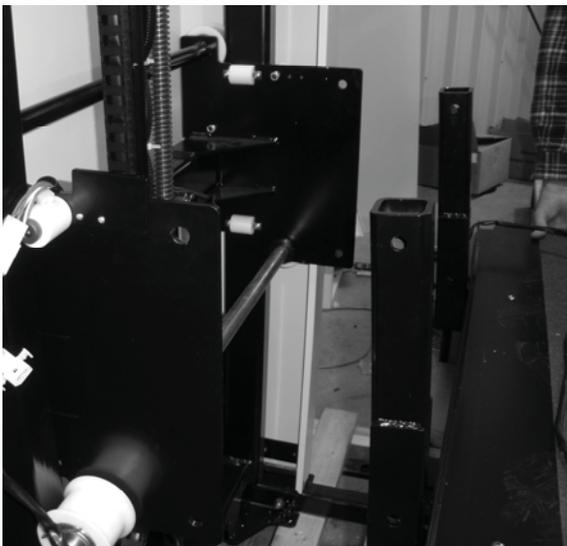
Step 1

The mounting bolts, nuts and spacers that secure the platform to the lift carriage are packaged in the small parts box. Begin by locating these pieces and setting aside.



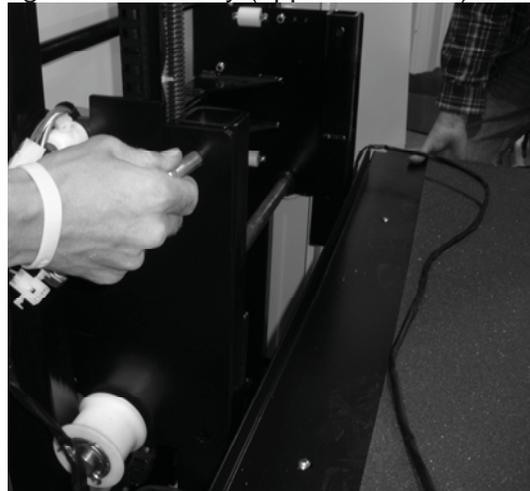
Step 2

Position the platform by aligning the support legs with the carriage flanges that protrude from the front cover.



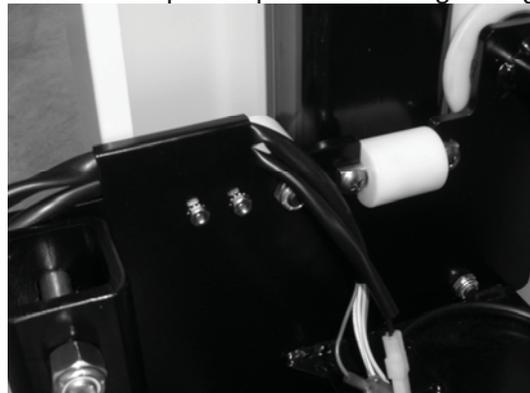
Step 3

Align the four mounting holes and insert a $\frac{1}{2}$ " x 3" bolt into each hole. The upper holes have a spacer that must be placed in between the carriage flange and platform leg. Install the locknut on each bolt and tighten sufficiently (approx. 50 lb-ft.).



Step 4

Plug in the harness for the platform safety pan and unplug the safety pan jumper on the controller (ref pg 5). Secure the harnesses under the clip on top of the carriage flange.



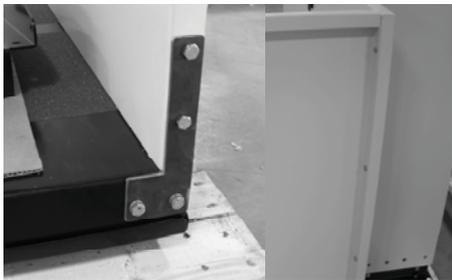
Installing the Outer Guard Panels

Step 1

Remove the hexbolts on the corners of the platform. Insert the guard panel posts into the pockets in the platform. The smooth side of the guard panels should face in towards the center of the platform.



If you have a 90 degree exit platform, install the end guard panel using the provided bracket and bolt to inner guard panel.



Step 2

Install the platform control box on the rear guard panel using screws and nuts through the panel.



Step 3

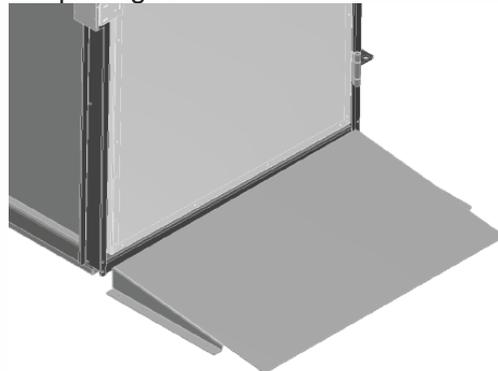
Plug in the harness for the platform control box. Secure the harnesses under the clip on top of the carriage flange.



Installing Fixed Ramp

Step 1

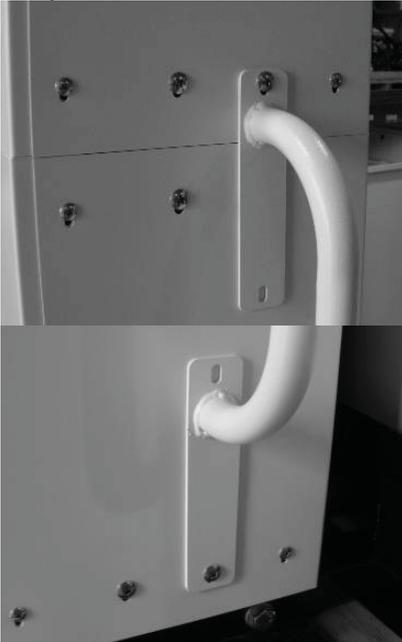
- Position the ramp after the lift is in its final location.
- Maintain a gap of 3/8" to 3/4" between the ramp and platform.
- Drill a pilot hole into the concrete and fasten using supplied concrete lags through ramp flanges.



Installing Auto-folding Ramp (optional)

Step 1

Install the ramp roller guide on the side of the lift tower using the screws already installed in the panels.



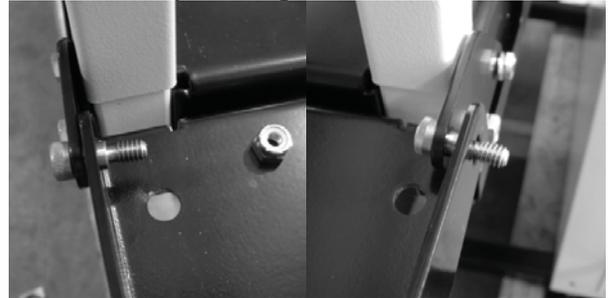
Step 2

Attach the two ramp pivot tabs to the lower landing sides of the platform. Reinsert the hex bolts, one of which will go through the guard panel post, and tighten.



Step 3

Attach the ramp to the pivot tabs using shoulder bolts and locking nuts. Tighten the nuts until they seat against the bolt shoulder.



Step 4

Attach the ramp roller arm by bolting it to the underside of the ramp.



The ramp roller should align and make contact with the ramp roller guide.



Anchoring the Lift

Anchors

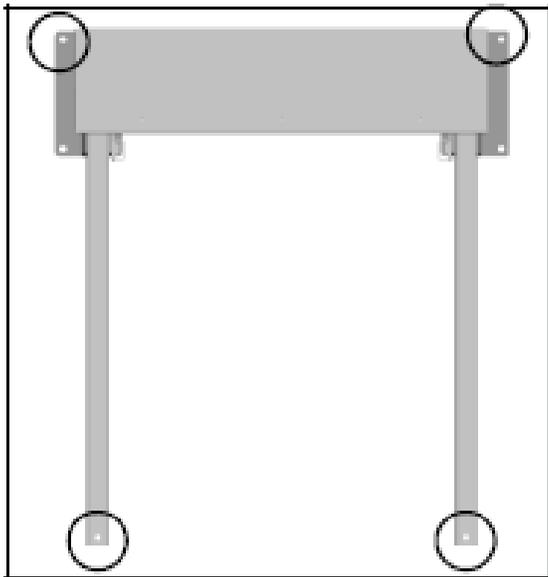
AmeriGlide recommends securing the lift using the concrete anchors provided. If you purchase your own floor anchors they must be 3/8" minimum of sufficient length. **All four floor anchors must be installed correctly in accordance to their instructions.**

Step 1

- Position the lift in its final location.
- Verify that it is level and perpendicular to its surroundings and all running clearances are the proper dimension.
- Shim if necessary.

Step 2

Use the lift's base as a template. Drill 4 holes into the concrete making sure that the holes are deep enough to accept the anchors.



Tip: Concrete dust may have settled into the holes you just drilled. Use a shop vacuum to clean out these holes. This will ensure the floor anchors set correctly.

Step 3

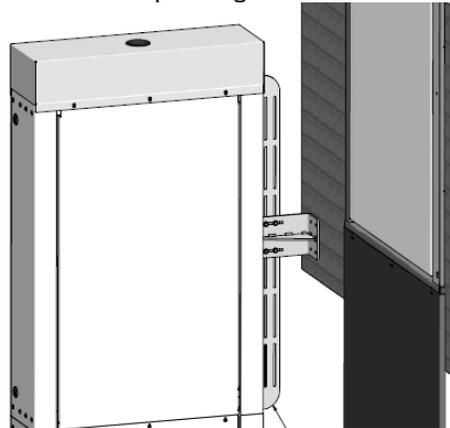
Secure the lift in place by tightening the floor anchor bolts.

Step 4 (800 or taller models)

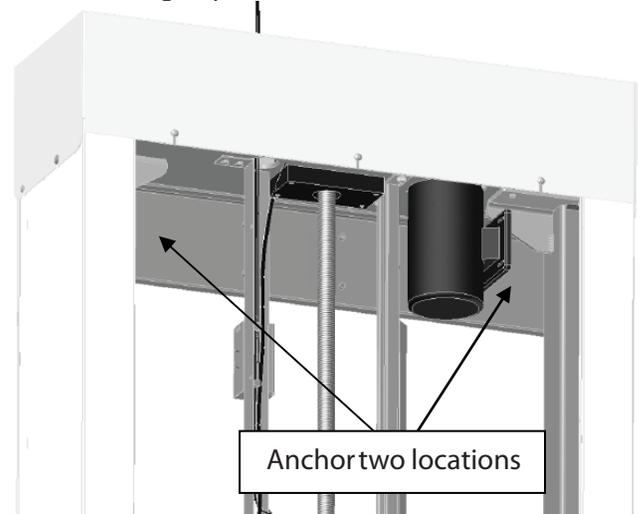
Taller lifts must have the top of the lift tower anchored into a solid surface to ensure running clearances remain constant.

There are two options for anchoring the top of the tower:

- 1) For lifts going up to a landing such as a deck or porch, the optional tower brace is the preferred method. Instructions for the brace are packaged with it.



- 2) For lifts that are placed with the back of the tower against a solid wall such as inside of a hoistway, drilling two holes through the top tower cross brace and anchoring is preferred.



Setting the Limit Switches

Your lift is equipped with upper and lower limit switches. The vertical location of these switches may be adjusted to fit your application. Typically the upper limit switch will need to be adjusted so the platform will stop level with the upper landing. The lower limit will typically not need adjusting.

Step 1

Verify the emergency switch is in the ON position. Run the lift in the up direction until the platform floor is level with the upper landing. Disconnect the lift's power (at the building's circuit breaker for AC units, at the battery box for DC units) before going to the next step.

Warning: Moving components can cut and crush. Do not operate the lift if you are in close proximity to any drive components. Be aware that loose clothing or jewelry may catch on moving parts.

Step 2

Remove the screws at the top of the lift that attach the front cover.



Step 3

Remove the front cover by tilting it forward and lifting upwards. The bottom of the front cover sits on a pin on either side of the lift frame. Set the cover aside in a safe location where it will not get damaged.



Step 4

Loosen the bolts that attach the upper limit switch assembly. Slide the assembly down the track until the lower switch in the assembly comes in contact with the lift's car. You should hear the limit switch click as contact is made. Retighten the set screw fastening the limit switch assembly in place.



Step 5

Replace the front cover and secure it with the screws you removed in step 1.

Step 6

Re-connect the lift's electrical power at the circuit breaker. Verify that the emergency switch is in the on position.

Step 7

Run the lift in the down direction for several inches. Next, run the lift in the up direction. Continue to press the up button until the upper limit switch has caused the lift to stop. Verify that the platform has stopped level with the upper landing. If it has not, readjust the limit until it is level.

Verifying Operation of the Lift

Caution: Complete the following section before training the customer to use the lift.

Step 1

Run the lift up and down for 5 complete cycles. Hold the direction button down and allow the limit switches to stop the lift. At the top, verify that the platform stops level with the upper landing. At the bottom, verify the access ramp (if equipped) unfolds and rests on the ground.

Step 2

Verify the operation of the Emergency stop switch. When this switch is pushed in the lift should not run in either direction. When this switch is turned and pulled back out, the lift should operate normally.



Step 3

Verify the operation of the sensor pan underneath the platform. Start with the lift at the top landing. Press up on the sensor pan. While holding the pan in this location, press the down switch on the platform. The lift should not run.

Warning: Do not run the lift if anyone is under the platform.

Manual Override

Your lift is equipped with a manual handcrank, to be used in the case of a power failure.

Step 1

Before using the manual handcrank verify that it's use is required. Check that the emergency stop switch is pulled out. Check that the electrical cord is connected to the supply. Also check that the buildings circuit breaker has not tripped. Try to run the lift by pushing both the up and down buttons. If the lift still will not run, complete the following steps:

Step 2

Disconnect the power from the lift.

Warning: Do not service or operate the manual handcrank while the lift is connected to electricity.

Step 3

Remove the screws and remove the top cap at the top of the tower.



Step 4

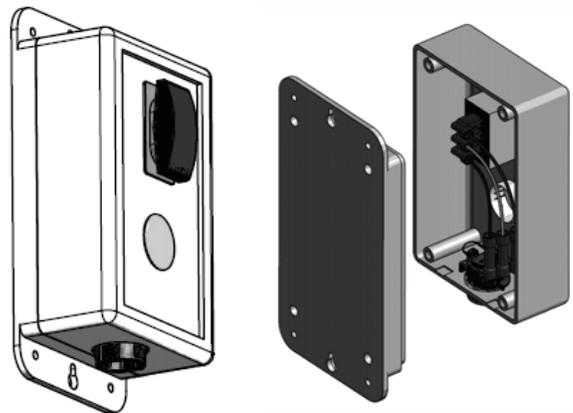
Insert the manual handcrank into the opening on the top of the brake assembly. It may be necessary to slightly rotate the handcrank until it fully seats down on the hex portion of the brake. Rotate the crank to raise or lower the platform.

Warning: Never operate the lift while the manual override crank is inserted into the lift.

Call-Sends (optional)

The optional Call-Send controls are to be used at the upper and/or lower landings to call the platform to you or send it to the other landing.

They should be mounted on the wall at each landing at a convenient height. Consult local codes for placement with consideration to clearances.



A length of multi-conductor wire will need to be ran from the bottom of the lift tower up to the landing Call-Sends. Consult local codes for type and mounting requirements. After wiring is completed, the wiring harness must be plugged into it appropriate receptacle on the controller (ref pg 5).

Wiring Connections

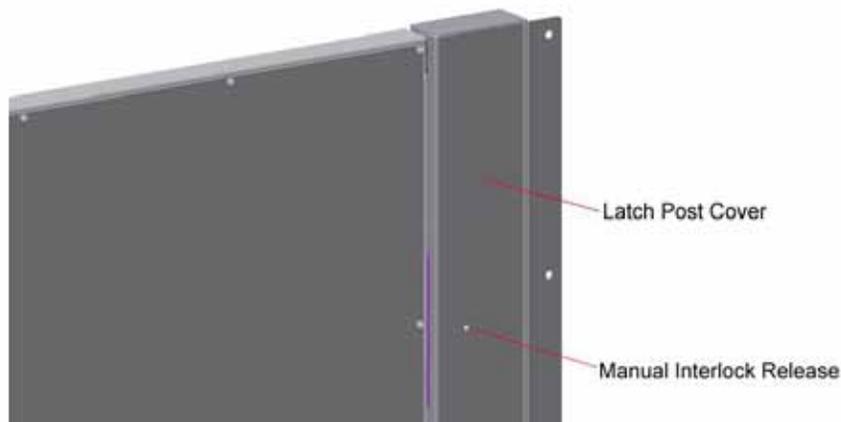
<u>Call-Send</u>	<u>Lift Harness</u>
Blue	Blue
White	White
Red	Red

Top Landing Gate (optional)

The optional top landing gate is provided with a combination mechanical lock and electric contact (interlock).

The interlock:

- Prevents the lift from running if the gate is not closed.
- Prevents the gate from being opened if the platform is not at the top landing.
- Unlocks when the lift is on the upper limit switch.



A crescent shaped key is provided to manually unlock the gate during installation. The key is inserted from the back side to lift up on the solenoid that holds the gated locked.

Mount the gate by placing onto the upper landing making sure to align the gate opening with the platform (outer guard rail not shown for clarity).

There are a number of attachment holes provided in the threshold portion of the gate for mounting using wood lag screws or concrete anchors as appropriate.

Remove the latch post cover and connect the call-send and interlock wire harnesses.

The vertical posts of the gate must be attached to a supporting structure, (the gate is not designed to be freestanding).

A length of multi-conductor wire will need to be ran from the bottom of the lift tower up to the landing gate. Consult local codes for type and mounting requirements. After wiring is completed, the wiring harness must be plugged into it appropriate receptacle on the controller (ref pg 5).

Wiring Connections

<u>Interlock Harness</u>	<u>Lift Harness</u>
Black	Black
Black	Green
Yellow	White
Yellow	Orange
	*Blue
	* Brown
*Must be tied together	

<u>Call-Send Harness</u>	<u>Lift Harness</u>
Blue	Blue
Yellow	White
Red	Red



EMI and Flush Strike Interlocks (optional)

The optional EMI or Flush Strike Interlocks are provided with a combination mechanical lock and electric contact. They are to be used with existing doors.

The interlock:

- Prevents the lift from running if the door is not closed.
- Prevents the door from being opened if the platform is not at the landing.

A length of multi-conductor wire will need to be ran from the bottom of the lift tower to each interlock. Consult local codes for type and mounting requirements. After wiring is completed, the wiring harness must be plugged into it appropriate receptacle on the controller (ref pg 5).

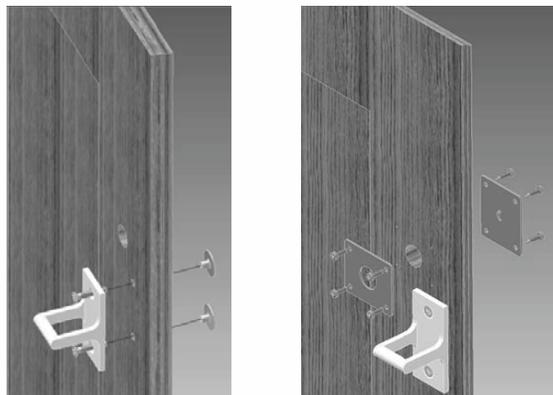
Flush Strike Interlock

Refer to the instructions inside the strike box for mounting requirements.

EMI Interlock



- 1) Position interlock to door jamb and mark mounting holes.
- 2) Fasten Interlock to door jamb with #8 wood screws.
- 3) Route 4-conductor Interlock cable thru hole in top of interlock and make wire connections.
- 4) Attach door keeper and emergency key plates to hoistway door.



Flush Strike Interlock Wiring Connections

For AC powered lifts

Flush Strike Wires	Rectifier Wires	Lift Harness Wires
Black-White Stripe	Red	
Black-White Stripe	Black	
	Yellow	Black
	Yellow	Green*
Yellow		White
Blue		Orange
Grey		Blue
Green		Brown
Red	Red	
Black	Black	
	Yellow	Red
	Yellow	Green*

For Optional DC powered lifts

Flush Strike Wires	Lift Harness Wires
Black-White Stripe	Black
Black-White Stripe	Green*
Yellow	White
Blue	Orange
Grey	Blue
Green	Brown
Red	Red
Black	Green*

*This is a single wire that will have 2 wires connected to it.

EMI Interlock Wiring Connections

EMI	Lift Harness
Black (A)	Black
Black (B)	Green
Yellow (C)	White
Yellow (D)	Orange
N/A	Blue+
N/A	Brown+
N/A	Red

+Must be tied together when using an EMI Interlock.

Platform Gate (optional)

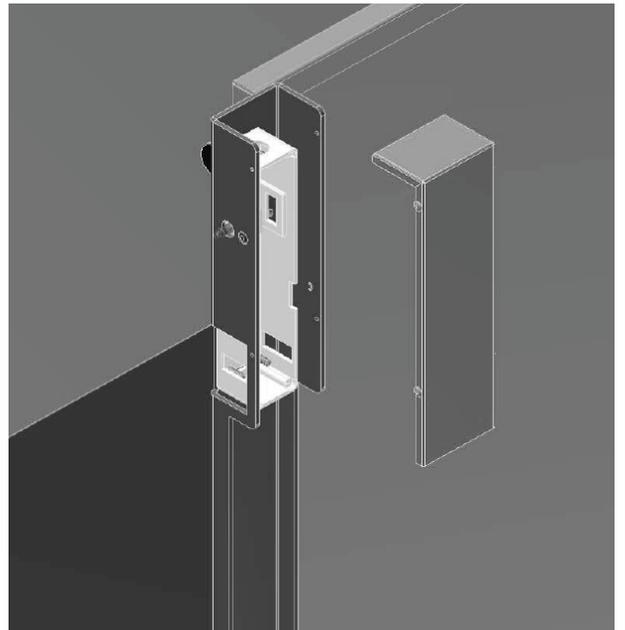
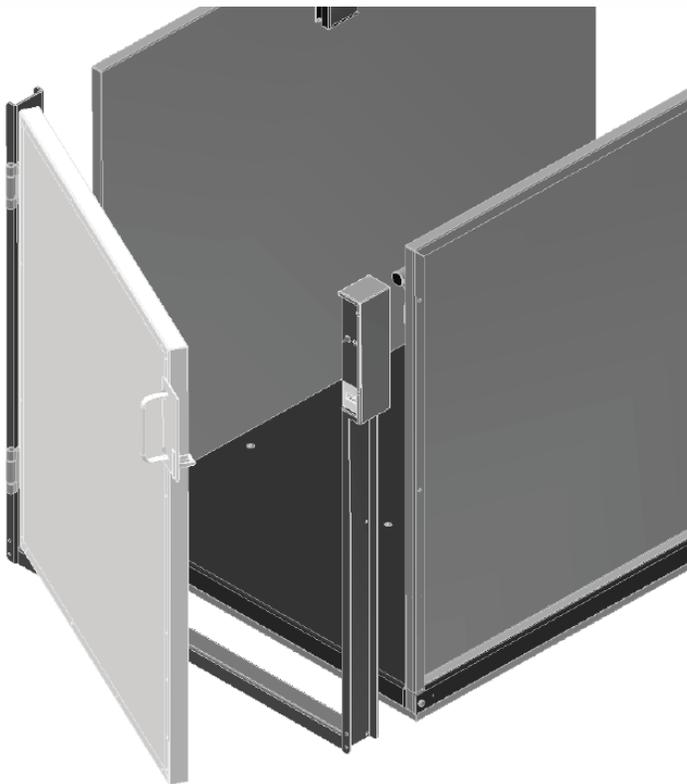
The optional platform gate is provided with a combination mechanical lock and electric contact (interlock).

The interlock:

- Prevents the lift from running if the gate is not closed.
- Prevents the gate from being opened if the platform is not at the bottom landing.
- Unlocks when the lift is on the lower limit switch.

A crescent shaped key is provided to manually unlock the gate during installation. The key is inserted from the back side to lift up on the solenoid that holds the gated locked.

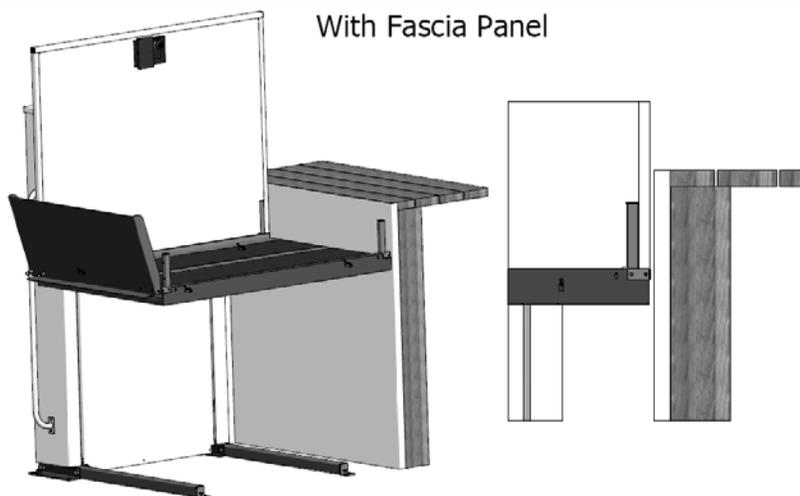
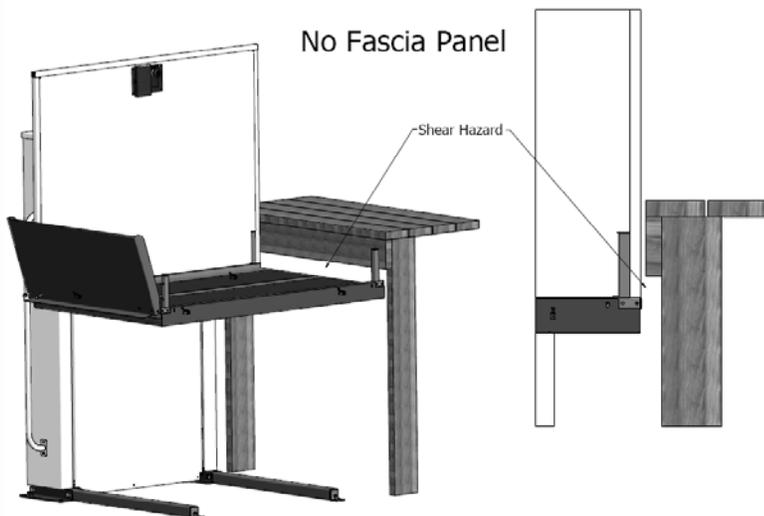
Mount the gate by placing onto the lower landing side of the platform. There are a number of attachment holes along the bottom and up the sides of the gate frame to attach to the platform and guard panels.



A wiring harness included on the gate will need to be routed along the gate frame, behind the rear guard panel and connected to its adjoining harness plug on the lift carriage. After wiring connection is made, the wiring harness must be plugged into its appropriate receptacle on the controller (ref pg 5).

Fascia Panel (optional)

A fascia panel provides a smooth surface for the platform edge to run against to prevent any shear or obstruction hazards and must be utilized.



A running clearance of no more than 3/4" and no less than 3/8" must be maintained between the edge of the platform and the fascia panel.

Commercial Platform Lift - Owners Section



ⓘ Read the manual thoroughly before operating the lift.

Congratulations on the purchase of your AmeriGlide Vertical Platform Lift. This lift has been engineered to provide trouble free service for many, many years. Please read this manual completely before operating your lift.

Safety

- Do not exceed the maximum payload capacity of 750 lbs.
- Do not ride on the lift until it is anchored in place.
- This product is designed only for lifting people and wheel chairs. Do not use it for any other purpose.
- Make sure any obstructions are cleared from underneath the platform area before use.
- Make sure both the passenger and wheelchair are completely on to the platform before using.
- Do not disable any safety equipment or switches supplied with this lift.
- Do not attempt to service the lift yourself. Contact your AmeriGlide dealer for assistance.
- Do not allow children to operate or play around the lift.
- Read all instructions in this manual before installing or operation the lift.

Controls



Emergency Stop

In an emergency push this red button to stop the lift. Turn the button clockwise to run.

Up

Controls upward movement of lift platform. To move platform up, depress and hold the upper half of the rocker switch. To cease movement, release switch.

Down

Controls downward movement of lift platform. To move platform down, depress and hold the lower half of the rocker switch. To cease movement, release switch.

Keylock (optional)

Disables controls from operating when keylock is turned off.

Operating the Lift

Step 1 - Up

Drive onto and stop in the middle of the platform. Apply the brakes of your chair or scooter.



Step 2

Verify that the emergency stop button is not activated by giving it a quick turn clockwise.



Step 3

Press and hold the UP rocker. The lift will move in the up direction and stop when it reaches the upper landing.



Warning: Always verify the lift's platform has stopped level with the upper landing. If not contact your AmeriGlide Dealer for assistance.

Step 4

Release the brakes on your chair or scooter and drive off the platform.



Step 1 - Down

Drive onto and stop in the middle of the platform. Apply the brakes of your chair or scooter.

**Step 2**

Verify that the emergency stop button is not activated by giving it a quick turn clockwise.

**Step 3**

Press and hold the DOWN rocker. The lift will move in the down direction and stop when it reaches the lower landing.



Warning: Always verify the lift's access ramp unfolds fully and rests on the ground. If not contact your AmeriGlide Dealer for assistance.

Step 4

Release the brakes on your chair or scooter and drive off the platform.



Limited Warranty Certificate

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Please fill out all fields and return within 10 days of product purchase.

Toll-Free Fax: 1-866-234-5680 or mail to:

Attn: Warranty Department

2075 47th Street, Sarasota, FL 34234

AmeriGlide warrants to the original purchaser of a Hercules Residential vertical platform lift manufactured by us to be free from defects in material, mechanical and electrical components (parts), excluding labor cost, batteries and paint, for a period of two (2) years, provided that the products have been installed, maintained and operated properly.

This warranty starts on the date of the retail purchase, provided the warranty certificate is returned to AmeriGlide, completely filled out within ten (10) days of purchase. This warranty does not cover maintenance or adjustments. AmeriGlide will not be charged for labor, consequential damage or repair expenses. AmeriGlide will not, under any circumstances, be liable for the loss of the use of its products or loss of time. This warranty becomes null and void if the product has been lost, damaged by accident, misused and/or neglected, or if the product has been modified in any way. Defective parts must be returned, prepaid, to AmeriGlide for inspection prior to credit or replacement. At AmeriGlide's option, any part found to have been modified, over-stressed, damaged by accident, or misused is not covered by this warranty.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, INCLUDING ALL IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION OF THE LIMITED WARRANTY DESCRIBED HEREIN.

This Limited Warranty gives you specific legal rights, and you may have other rights which vary from state to state.

PRODUCT INFORMATION

Model: _____

Serial No: _____

Purchase Date: _____

INSTALLER INFORMATION

Account ID#: _____

Company Name: _____

Contact: _____

Address: _____

Phone: _____

Email: _____

PURCHASER INFORMATION

Name: _____

Address: _____

Phone: _____

Email: _____

How did you hear about AmeriGlide?

- AmeriGlide Dealer Internet
 Magazine Friend or Acquaintance
 Saw AmeriGlide Product Somewhere
 Other: _____

I purchase my AmeriGlide lift because:

- Style/Appearance Ease of Use
 Price/Value Recommendation
 Previous Experience

Please rate your satisfaction with your AmeriGlide dealer:

- Excellent Good Fair Poor