



MISSOURI
HIGHWAYS and TRANSPORTATION
COMMISSION
JEFFERSON CITY, MISSOURI

BID FORMS
AND
SPECIFICATIONS

FOR
CONSTRUCTING OR IMPROVING
IFB 9-101102
DISTRICT – 3
WASH BAY BUILDINGS
SHELBINA & MEXICO, MISSOURI

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"EXCESSIVE UNEMPLOYMENT IS IN EFFECT"

Only Missouri laborers and laborers from nonrestrictive states are allowed by law to be employed on Missouri's public works projects when the unemployment rate exceeds 5 percent for two consecutive months. **(See Sections 290.550 through 290.580 RSMo).**

Restrictive states are as follows: Alaska, Arizona, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Idaho, Illinois, Iowa, Maine, Massachusetts, Mississippi, Montana, Nevada, New Jersey, North Dakota, Oklahoma, South Dakota, and the U.S. Virgin Islands, West Virginia and Wyoming.

FINAL CHECKLIST BEFORE SUBMITTING PROPOSAL

- ____1. Complete the Bid Form by filling in the total dollar amount of the bid; listing any addenda which may have been issued; filling in the dollar amount of the bidder's check or Bid Bond, sign the proper signature line, and supply the required information in connection with the signature for the individual bidder, joint adventurer, or corporation.
- ____2. Submit Bid Bond executed by the bidder and surety. Bidders are required to use the Bid Bond furnished by the Commission or attach cashier's check to Bid Bond form. Personal checks are not accepted.
- ____4. Complete Subcontractor section by listing major subcontractor(s) and general supervisor(s), sign as required.
- ____5. Complete Certification Regarding Missouri Domestic Products Procurement Act section, if applicable.
- ____6. Complete Missouri Service-Disabled Veteran Business Preference, if applicable.
- ____7. If addenda(s) are issued attach to the back of the bid package. Copy addenda and add to the appropriate section of the orange bound Request for Proposal and retain for your records.

NEWSPAPER ADVERTISEMENT

Notice to Contractors

MoDOT will receive bids at its General Services-Facilities section, 830 MoDOT Drive, Jefferson City, MO until 3:00 PM November 2, 2010 for constructing a Wash Bay Building at Shelbina and Mexico, MO. Contact Lynn Ferguson at 573-751-4879 or Lynn.Ferguson@modot.mo.gov to obtain plans, forms, and information or download them at no charge from <http://www.modot.org/gsbidding/>.

00020

INVITATION TO BID

Notice is given hereby that the Missouri Department of Transportation will accept bids for construction of the project marked "9-101102 Wash Bay -Shelbina & Mexico, Missouri ", according to Drawings and Specifications, and described in general as:

Construction of two pre-engineered metal buildings on concrete foundation. One building shall be located at MoDOT's Shelbina Maintenance Complex and the other at the Mexico Maintenance Complex. The metal building has nominal dimensions of 30' wide x 50' long with an eave height of 18' A.F.F., with pit drain, oil/water interceptor and standing seam roof. MoDOT has located the buildings on each site.

Sealed bids will be received by the Missouri Department of Transportation at its Central Office, 830 MoDOT Drive, PO Box 270, Jefferson City, MO 65102-0270 until 3:00 P.M., November 2, 2010.

Bids will be opened and read aloud at that time and that place. Bids received after that time will not be accepted.

Contact Lynn Ferguson at 573-751-4879 or Lynn.Ferguson@modot.mo.gov to obtain plans, forms, and information or download them at no charge from <http://www.modot.mo.gov/gsbidding/>.

Prevailing wages as established by the Missouri Department of Labor and Industrial Relations, for Audrain and Shelby Counties, as shown herein will apply.

Bid securities in the amount of 5% of the bid will be required to accompany bids.

Bids must be made on forms provided by the Commission. The Commission reserves the right to reject any or all bids and to waive irregularity in the bids and the bidding. No bid may be amended or withdrawn after the bid is opened.

Project Location: Shelbina, Missouri (Route 63, 0.4 Miles West of Route 15)
Mexico, Missouri (Route JJ, 0.5 Miles South of Route 54)

Interested contractors shall schedule site visits to inspect the proposed work location by contacting **Todd Roth**.
Todd.Roth@modot.mo.gov or 573-231-6593.

INSTRUCTIONS TO BIDDER

1. SCOPE OF WORK

Construction of two pre-engineered metal buildings on concrete foundation. One building shall be located at MoDOT's Shelbina Maintenance Complex and the other at the Mexico Maintenance Complex. The metal building has nominal dimensions of 30' wide x 50' long with an eave height of 18' A.F.F., with pit drain, oil/water interceptor and standing seam roof. MoDOT has located the buildings on each site.

2. BID INSTRUCTIONS

In order to receive consideration, bids must be made in strict accordance with the following.

- A. Make bids, upon the forms provided herein, properly signed and with all items filled out. Do not change the wording of the bid form and do not add words to the bid form. Unauthorized conditions, limitations or provisions attached to the bid will be cause for rejection of the bid.
- B. No telegraphic bid or telegraphic modification of a bid will be considered. No bids received after the time fixed for receiving them will be considered. Late bids will be returned to the bidder unopened.
- C. Address bids to the Missouri Department of Transportation, and deliver to the address given in the Invitation for Bid, on or before the day and hour set for opening the bids. Enclose each bid in a sealed envelope bearing the title of the Work, the name of the bidder, and the date and hour of the bid opening. Submit only the original signed copy of the bid. It is the sole responsibility of the bidder to see that the bid is received on time.

3. BONDS

- A. Each proposal shall be accompanied by a Bid Bond, Certified Check, Cashier's Check or Bank Money Order payable to the Director of Revenue – Credit State Road Fund for an amount equal to Five Percent (5%) of the amount of the BID submitted. This is to act as a guarantee that the bidder, if awarded the contract, will furnish an acceptable performance and payment bond (Contract Bond) or a cashier's check, a bank money order or a certified check made payable to "Director of Revenue – Credit State Road Fund" in an amount equal to One Hundred (100%) of the contract price.
- B. If a BID BOND is used (in lieu of a certified check, cashier's check, or bank money order), it must be in the form provided and executed by the bidder as principal and by a surety company authorized to do business in the State of Missouri as surety. The agent executing the same on behalf of the surety company must attach a current Power of Attorney setting forth his authority to execute the bond involved.
- C. Certified Checks, Cashier's Checks or Bank Money Orders of unsuccessful bidders will be returned as soon as the award is made. The checks or bank money orders of the successful bidder(s) will be retained until the contract is executed and a satisfactory Performance and Payment (Contract Bond) is furnished. Bid Bonds will not be returned except on specific request of the bidder.

4. INVOICING AND PAYMENT

- A. MoDOT is exempt from paying Missouri Sales Tax, Missouri Use Tax and Federal Excise Tax. However, the successful bidder to whom the contract is awarded, (hereinafter, "contractor") may themselves be responsible for the payment of taxes on materials they purchase to fulfill the contract. A Project Tax Exemption Certificate will be furnished to the successful bidder upon request if applicable.
- B. Each invoice should be itemized in accordance with items listed on the contract in accordance with Section 01019, Contract Considerations, Applications for Payment provisions. Failure to comply with this requirement may delay processing of invoices for payment.
- C. Unless otherwise provided for in the solicitation documents, payment for all equipment, supplies, and/or services required herein shall be made in arrears. The Commission shall not make any advance deposits.
- D. The Commission assumes no obligation for equipment, supplies, and/or services shipped or provided in excess of the quantity ordered. Any authorized quantity is subject to the Commission's rejection and shall be returned at the Contractor's expense.
- E. The Commission reserves the right to purchase goods and services using the state-purchasing card.

5. EXAMINATION OF DOCUMENTS AND SITE OF WORK

- A. Before submitting a bid, each bidder shall examine the Drawings carefully, read the Specifications and all other proposed Contract Documents, and visit the site of the work. Each bidder shall fully inform themselves, prior to bidding, as to existing conditions and limitations under which the Work is to be performed and shall include in his bid a sum to cover the cost of items necessary to perform the Work, as set forth in the proposed Contract Documents. No allowance will be made to a bidder because of lack of such examination or knowledge. The submission of a bid will be considered conclusive evidence that the bidder has made such examination.
- B. The contract price shall include any necessary permits and licenses required by law incidental to the work. Local ordinances requiring building permits are not applicable to the state. Contractor will comply with local laws involving safety in the prosecution of the work.

6. INTERPRETATION

No oral interpretations will be made to any bidder as to the meaning of the plans and specifications or the acceptability of alternate products, materials, form or type of construction. Every request for interpretation shall be made in writing and submitted with all supporting documents not less than ten (10) days before opening of bids. The request shall be sent directly to the Senior Facilities Designer. Every interpretation made to a bidder will be in the form of an addendum and will be sent as promptly as is practicable to all persons to whom plans and specifications have been issued. All such addenda shall become part of the contract documents.

7. PROOF OF COMPETENCY OF BIDDER

A bidder may be required to furnish evidence, satisfactory to the Commission, that he and his proposed subcontractor(s) have sufficient means and experience in the types of work called for to assure completion of the Contract in a satisfactory manner.

8. WITHDRAWAL OF BIDS

After the bid/proposal opening, a vendor may be permitted to withdraw a bid/proposal prior to award at the sole discretion of the division if there is a verifiable error in the bid/proposal and enforcement of the bid would impose an unconscionable hardship on the vendor. This withdrawal will be considered only after receipt of a written request and supporting documentation from the vendor. Withdrawal shall be the vendor's sole remedy for an error other than an obvious clerical error. Withdrawal of a bid/proposal may result in forfeiture of the bid/proposal bond.

9. AWARD OR REJECTION OF BIDS

- A. The Contract, if awarded, will be made on an **"Item By Item" basis using the "lowest and best" principle of award**, subject to the Commission's right to reject any or all bids and to waive informality and irregularity in the bids and in the bidding.
- B. Award of alternates, **if any**, will be made in numerical order to result in the maximum amount of work being accepted within available construction funds.

10. CONTRACT DOCUMENTS

- A. By submitting a bid, the bidder agrees to furnish any and all equipment, supplies and/or construction services specified in the solicitation documents, at the price(s) stated in their bid, pursuant to all requirements and specifications contained therein.
- B. A binding contract, contract documents, shall consist of: (1) the solicitation documents with any drawings and/or attachment/exhibits, amendments thereto, and/or Best and Final Offer (BAFO) request(s) with any changes/additions, (2) the Contractor's submitted pricing, and (3) the Commission's acceptance of the bid by purchase order or post-award contract.
- C. A notice of award does not constitute an authorization for shipment of equipment or supplies or a directive to proceed with services. Before providing equipment, supplies and/or services, the Contractor must receive a properly authorized purchase order and/or notice to proceed.

- D. The contract expresses the complete agreement of the parties and performance shall be governed solely by the specifications and requirements contained therein. Any change, whether by modification and/or supplementation, must be accomplished by a formal contract amendment signed and approved by and between the duly authorized representative of the Contractor and the duly authorized representative of the Commission, by a modified purchase order prior to the effective date of such modification. The Contractor expressly and explicitly understands and agrees that no other method and/or no other document, including correspondence, acts, and oral communications by or from any person, shall be used or construed as an amendment or modification.
- E. Failure to execute the contract and file acceptable performance payment (Contract Bond) or cashier's check, bank money order or certified check within after the contract has been mailed to the bidder shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised and performed under contract or otherwise, as the Commission may decide. No contract shall be considered effective until it has been executed by all parties thereto.

11. NONDISCRIMINATION

- A. The successful bidder understands that this project involves state funds and the successful bidder awarded the contract will be required to comply with the Executive Order 05-30 of the Governor of the State of Missouri dated September 8, 2005. This order stipulates that there shall be no discriminatory employment practices by the Contractor or his subcontractors, if any, based on race, sex, religion, national origin, age, color, disability, or veteran status. The undersigned Contractor or his subcontractors, if any, shall give written notice of their commitments under this clause to any labor union with which they have bargaining or other agreements.
- B. The Contractor shall comply with the Regulations relative to nondiscrimination in federally-assisted programs of the Department of Transportation, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- C. All solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of the Contractor's obligations under this contract and the Regulations, will be relative to nondiscrimination on the grounds of race, color, or national origin.
- D. Sanctions for Noncompliance: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, MoDOT shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to: (i) withholding of payments to the Contractor under the contract until the Contractor complies, and/or, (ii) cancellation, termination or suspension of the contract, in whole or in part.

12. SUBMITTALS

Review of Submittals. The Architect/Engineer/Designer review of submittals is only for the limited purpose of checking for conformance with information given and seeing if they conform to design intent. The General Services Facilities Manager is not responsible for determining the accuracy of measurements and completeness of details, for verifying quantities, or for checking fabrication or installation procedures. The General Services Facilities Manager's review does not relieve the contractor of his or her responsibilities under the contract documents. The submittal process shall be carried out as outlined in Section 01300, Submittals.

13. WORK QUALITY

- A. Inspection of Work. The General Services Facility Operations Supervisor or designated representative shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other data and records relating to the work. If requested by the General Services-Facility Operations Supervisor or designated representative, the contractor shall at any time before final acceptance of the work uncovers any portion of the finished work as directed for inspection. After examination, the contractor shall restore said portions of the work to the standards required by the contract. Should the work thus exposed and examined prove acceptable, the actual cost of uncovering, removing and replacing shall be paid by the Commission. Should the work so exposed and examined prove unacceptable, the uncovering, removing and replacing shall be at the expense of the contractor.

- B. Defective Work. All work which has been rejected shall be remedied, or if necessary, removed and replaced in an acceptable manner by the contractor at its expense. If the contractor fails to remedy or replace such defective work immediately after receiving written notice from the General Services-Facility Operations Supervisor or designated representative, the Commission may employ labor to correct the defective work, and the cost incurred in making such corrections shall be deducted from the payment due or to become due the contractor under this contract.
- C. Contractor will provide a one-year warranty for parts and labor on all building material, and equipment or a standard manufacturer's warranty which ever is greater. All warranties, including extended service agreements shall begin on the date of Final Acceptance of this project.
- D. Contractor's Responsibility for Work. Until the General Services-Facility Operations Supervisor or designated representative, accepts the work, it shall be in the custody and under the charge and care of the contractor. Contractor shall rebuild, repair, restore or make good at its own expense any lost or stolen Commission-owned material and all injuries or damages to any portion of the work caused by action of the elements or from any other reason before its completion and final acceptance. Issuance of a payment estimate on any part of the work done will not be considered as final acceptance of any work completed up to that time.
- E. Preservation of Utilities and Monuments. The contractor shall be responsible for the preservation of all public and private utilities, wires, lines, pipes, poles, cables, and conduit at the site of the work and shall use every precaution necessary to prevent damage or injury thereto. The contractor shall not disturb or damage any land monument or property landmark until an authorized agent has witnessed or otherwise referenced, their location and shall not remove them until directed by General Services Facilities Manager.
- F. Cooperation with Other Contractors. The contractor shall arrange its work so as not to interfere with the operations of other contractors of the Commission which might be engaged in performing adjacent or nearby work. Whenever work being done by other contractors is contiguous or related to the work involved in this contract, the respective rights of the various contractors will be determined by the General Services-Facility Operations Supervisor or designated representative in order to secure the completion of the work under all contracts in general harmony.
- G. The contractor will be required to remove from the Commission's property all debris.
- H. Temporary Suspension of Work. The General Services-Facility Operations Supervisor or designated representative shall have authority to suspend work, wholly or in part, for such period or periods of time as he may deem necessary when weather or other conditions are such that in the opinion of the General Services-Facility Operations Supervisor or designated representative the work may be done at a later time with advantage to the Commission or for failure on the part of the contractor to comply with any of the provisions of the contract. The contractor may suspend work for reasonable cause with written approval of the General Services-Facility Operations Supervisor or designated representative. Liquidated damages shall not accrue during the period in which work is suspended with the approval of the General Services-Facility Operations Supervisor or designated representative, however, if the suspension is because of the contractor's failure to comply to any of the provisions of the contract, the contractor shall not be entitled to an extension of completion time nor to a waiver of liquidated damages. In the event work is suspended, the contractor shall store all materials in a manner that will protect them from damage, and shall take every precaution to prevent damage or deterioration of, the portions of the work completed. If work has been discontinued for any reason, the contractor shall give the General Services-Facility Operations Supervisor or designated representative written notice at least forty-eight (48) hours before resuming operations.

14. CHANGE ORDERS

- A. General. All departures from the plans and specifications will be considered unauthorized unless, before proceeding with the work, the contractor has had delivered to it a change order, signed by the General Services-Facility Operations Supervisor or designated representative, authorizing and directing such changes or departures. All unauthorized work shall be at the contractor's expense and the General Services-Facility Operations Supervisor or designated representative may order such unauthorized work removed and replaced at the contractor's expense.
- B. Overhead and Profit on Change Orders. The percentages for overhead and profit charged on Change Orders and Field Work Authorizations shall be negotiated and may vary according to the nature, extent and complexity of the work involved. However, the overhead and profit for the contractor or subcontractor actually performing the work shall not exceed 15%. When one or more tiers of subcontractors are used, in no event shall any contractor or subcontractor receive as overhead and profit more than

7% of the cost of the work performed by any of his subcontractors. In no case shall the total overhead and profit paid by the owner on any change order exceed twenty five percent (25%) of the cost of materials, labor and equipment necessary to put the change order work in place.

- C. Contractor's Procedure for Claims. If the contractor considers additional compensation may be due for work or material not clearly covered in the contract or ordered in writing by the General Services-Facility Operations Supervisor or designated representative as extra work, or if additional compensation may be requested beyond the scope of such provisions, the contractor shall notify the General Services-Facility Operations Supervisor or designated representative in writing of the intention to make a claim before beginning the work in question. If notification is not given and the General Services-Facility Operations Supervisor or designated representative is not afforded proper facilities by contractor to provide necessary inspection and for keeping strict account of actual cost, the contractor agrees to waive any claims for additional compensation. Notice by the contractor, and the fact that the General Services-Facility Operations Supervisor or designated representative has kept account of the cost shall not be construed as substantiating the validity of the claim. The contractor shall file a written notice of claim for additional compensation in triplicate within 60 days after completing the work in question.
- a. If the claim is against the Commission, the notice of claim shall be personally delivered, or sent by certified mail to the office of the Secretary of the Commission in Jefferson City, Missouri. All notices of claims shall contain an itemized statement showing completely and fully the items and amounts forming the basis of the claim.
 - b. Any claim or an item of any claim, not included in the notice and statement, or any claim included but not clearly defined and specifically set out and itemized or any claim not filed within the time and in the manner provided, shall be forever waived and shall neither constitute the basis of nor be included in any legal action, counterclaim, set-off, or arbitration.
 - c. All claims filed with Missouri Highway and Transportation Commission's Secretary will be forwarded to the Missouri Department of Transportation's Claims Committee.

15. INSURANCE

- A. The Contractor shall maintain or cause to be maintained at Contractor's own expense commercial general liability, automobile liability, and worker's compensation insurance against negligent acts, errors or omissions of the Contractor, or its subcontractors and anyone directly or indirectly employed by any of them. Any insurance policy required as specified in this Section shall be written by a company that is licensed and authorized to issue such insurance in the state of Missouri and shall provide insurance coverage for not less than the following limits of liability:
- a. General Liability: Not less than \$500,000 for any one person in a single accident or occurrence, and not less than \$3,000,000 for all claims arising out of a single occurrence;
 - b. Automobile Liability: Not less than \$500,000 for any one person in a single accident or occurrence, and not less than \$3,000,000 for all claims arising out of a single occurrence;
 - c. Missouri State Workmen's Compensation policy or equivalent in accordance with state law.
 - d. Upon request from the Commission, the Contractor shall provide the Commission with certificates of insurance evidencing the required coverage and that such insurance is in effect.

16. CONSTRUCTION TIME AND LIQUIDATED DAMAGES

- A. Time of Completion - If this bid is accepted, it is hereby agreed that work will begin not later than the date specified in the "Notice to Proceed" and will diligently be prosecuted in order to complete the work and billing within 40-working days from the date specified. Completion of work will be based on FINAL ACCEPTANCE of the building; "SUBSTANTIAL COMPLETION" will not be accepted as basis for completion.
- B. Liquidated Damages - In the event the successful Contractor fails to deliver the material within the time specified, the Department and the public will sustain damages because of such delay in delivery, the exact extent of which would be difficult to ascertain, and in order to liquidate such damage in advance it is agreed that the sum of two-hundred dollars (\$200.00) per day, per item, for each assessable calendar day on which the delivery has not been completed, is reasonable

and the best estimate which the parties can arrive at as liquidated damages, and it is therefore agreed that said amount will be withheld from payments due the Contractor or otherwise collected from the Contractor as liquidated damages. Saturdays, Sundays, holidays and days whereas the Department has suspended work shall not be assessable days.

- C. A working day. Is defined as any day when, soil and weather conditions would permit the major operation of the project for six hours or more unless other unavoidable conditions prevent the contractor's operation. If conditions require the contractor to stop work in less than six hours, the day will not be counted as a working day. Working days will begin as soon as notice to proceed is issued. In order for MoDOT not to change a workday due to unavoidable conditions, the contractor must have enough forces, equipment, and materials on site to begin the project. The contractor must notify MoDOT inspector before 12:00 noon of said working day if forces will not be present.

17. EXECUTIVE ORDER

- A. The Contractor shall comply with all the provisions of Executive Order 07-13, issued by the Honorable Matt Blunt, Governor of Missouri, on the sixth (6th) day of March, 2007. This Executive Order, which promulgates the State of Missouri's position to not tolerate persons who contract with the state engaging in or supporting illegal activities of employing individuals who are not eligible to work in the United States, is incorporated herein by reference and made a part of this Agreement.
- B. "By signing this Agreement, the Contractor hereby certifies that any employee of the Contractor assigned to perform services under the contract is eligible and authorized to work in the United States in compliance with federal law."
- C. In the event the Contractor fails to comply with the provisions of the Executive Order 07-13, or in the event the Commission has reasonable cause to believe that the contractor has knowingly employed individuals who are not eligible to work in the United States in violation of federal law, the Commission reserves the right to impose such contract sanctions as it may determine to be appropriate, including but not limited to contract cancellation, termination or suspension in whole or in part or both.
- D. The Contractor shall include the provisions of this paragraph in every subcontract. The Contractor shall take such action with respect to any subcontract as the Commission may direct as a means of enforcing such provisions, including sanctions for noncompliance.

18. Missouri law, 292.675 RSMo, requires the Contractor and its subcontractor(s) to provide a ten-hour occupational safety and health administration (OSHA) construction safety program (or a similar program approved by the Missouri Department of Labor and Industrial Relations as a qualified substitute) for their on-site employees (laborers, workmen, drivers, equipment operators, and craftsmen) who have not previously completed such a program and are directly engaged in actual construction of the improvement (or working at a nearby or adjacent facility used for construction of the improvement). The Contractor and its subcontractor(s) shall require all such employees to complete this ten-hour program, pursuant to 292.675 RSMo, unless they hold documentation on their prior completion of said program. Penalties for non-compliance include Contractor forfeiture to the Commission in the amount of \$2,500, plus \$100 per contractor and subcontractor employee for each calendar day such employee is employed beyond the elapsed time period for required program completion under 292.675 RSMo.

19. EMPLOYMENT OF UNAUTHORIZED ALIENS

- A. Pursuant to RSMo 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 by the state or by any political subdivision of the state to a business entity, or for any business entity receiving a state-administered or subsidized tax credit, tax abatement, or loan from the state, the business entity 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 unauthorized alien in connection with the contracted services. [RSMO 285.530 (2)] A copy of the affidavit referenced above is provided within this document.
- B. E-Verify is an example of a federal work authorization program. Acceptable enrollment and participation documentation consists of **completed** copy of the E-Verify Memorandum of Understanding (MOU). For vendors that are not already enrolled and participating in a federal work authorization program, E-Verify is available at http://www.dhs.gov/xprevprot/programs/gc_1185221678150.shtm.

20. PREFERENCES

- A. In the evaluation of bids, preferences shall be applied in accordance with Chapter 34 RSMo. Contractors should apply the same preferences in selecting subcontractors.
- B. By virtue of statutory authority, RSMo. 34.076 and 34.350 to 34.359, a preference will be given to materials, products, supplies, provisions and all other articles produced, manufactured, made or grown within the State of Missouri. Such preference shall be given when quality is equal or better and delivered price is the same or less.
 - 1) If attached, the document entitled “PREFERENCE IN PURCHASING PRODUCTS” should be completed and returned with the solicitation documents.
 - 2) If attached, the document entitled “MISSOURI DOMESTIC PRODUCTS PROCUREMENT ACT” should be completed and returned with the solicitation documents. Applies if bid is Twenty-Five Thousand Dollars (\$25,000.00) or more.
- C. By virtue of statutory authority, RSMo 34.074, a preference will be given all contracts for the performance of any job or service to service-disabled veteran business either doing business as Missouri firms, corporations, or individuals; or which maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less or whenever competing bids, in their entirety, are comparable.
 - 1) If attached, the document entitled “MISSOURI SERVICE-DISABLED VETERAN PREFERENCE” should be completed and returned with the solicitation documents.
- D. In the event of a tie of low bids, the MHTC reserves the right to establish the method to be used in determining the award.

General Performance

- a. This work is to be performed under the general supervision and direction of the Missouri Department of Transportation (MoDOT) and, if awarded any portion of the work, the Contractor agrees to furnish at his own expense all labor and equipment required to complete the work, it being expressly understood that this solicitation is for completed work based upon the price(s) specified and is not a solicitation for rental of equipment or employment of labor by MoDOT, and MoDOT is to have no direction or control over the employees used by the Contractor in performance of the work.

Deliveries

- a. Unless otherwise specified on the solicitation documents or purchase order, suppliers shall give at least 24 hours advance notice of each delivery. Delivery will only be received between the hours of 8:00 a.m. to 3:00 p.m., Monday through Friday. Material arriving after 3:00 p.m. will not be unloaded until the following workday. No material will be received on Saturday, Sunday or state holidays.
- b. The following days shall be construed as official holidays under the terms of the contract:

January 1	New Year's Day
Third Monday in January	Martin Luther King, Jr.'s Birthday
February 12	Lincoln's Birthday
Third Monday in February	Washington's Birthday
May 8	Truman's Birthday
Last Monday in May	Memorial Day
July 4	Independence Day
First Monday in September	Labor Day
Second Monday in October	Columbus Day
November 11	Veteran's Day
Fourth Thursday in November	Thanksgiving Day
December 25	Christmas Day
- c. When any of the above holidays falls on a Sunday, the holiday will be observed on the following Monday; when any of the above holidays falls on a Saturday, the holiday will be observed on the immediately preceding Friday.
- d. If the prices bid herein include the delivery cost of the material, the Contractor agrees to pay all transportation charges on the material as FOB - Destination. Freight costs must be included in the unit price bid and not listed as a separate line item.
- e. Any demurrage is to be paid by the Contractor direct to the railroad or carrier.

Applicable Laws and Regulations

- a. The contract shall be construed according to the laws of the State of Missouri. The Contractor shall comply with all local, state, and federal laws and regulations related to the performance of the contract.

- b. The Contractor must be registered and maintain good standing with the Secretary of State of the State of Missouri and other regulatory agencies, as may be required by law or regulations. Prior to the issuance of a purchase order and/or notice to proceed, the Contractor may be required to submit to MoDOT a copy of their current Authority Certificate from the Secretary of State of the State of Missouri.
 - 1) Prior to the issuance of a purchase order and/or notice to proceed, all out-of-state Contractors providing services within the state of Missouri must submit to MoDOT a copy of their current Transient Employer Certificate from the Department of Revenue, in addition to a copy of their current Authority Certificate from the Secretary of State of the State of Missouri.
- c. The exclusive venue for any legal proceeding relating to or arising, out of the contract shall be in the Circuit Court of Cole County, Missouri.

Remedies and Rights

- a. No provision in the contract shall be construed, expressly or implied, as a waiver by the MHTC of any existing or future right and/or remedy available by law in the event of any claim by the MHTC of the Contractor's default or breach of contract.
- b. The Contractor agrees and understands that the contract shall constitute an assignment by the Contractor to the MHTC of all rights, title and interest in and to all causes of action that the Contractor may have under the antitrust laws of the United States or State of Missouri for which causes of action have accrued or will accrue as the result of or in relation to the particular equipment, supplies, and/or services purchased or produced by the Contractor in the fulfillment of the contract with the MHTC.
- c. In the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request MoDOT to enter into such litigation to protect the interests of the MHTC, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

Cancellation of Contract

The MHTC may cancel the contract at any time for a material breach of contractual obligations or for convenience by providing the Contractor with written notice of cancellation. Should the MHTC exercise its right to cancel the contract for such reasons, cancellation will become effective upon the date specified in the notice of cancellation sent to the Contractor.

Bankruptcy or Insolvency

Upon filing for any bankruptcy or insolvency proceeding by or against the Contractor, whether voluntary or involuntary, or upon the appointment of a receiver, trustee, or assigned the benefit or creditors, the Contractor must notify MoDOT immediately. Upon learning of any such actions, the MHTC reserves the right, at its sole discretion, to either cancel the contract or affirm the contract and hold the contractor responsible for damages. Inventions, Patents, and Copyrights

Inventions, Patents, and Copyrights

The Contractor shall defend, protect, and hold harmless the MHTC, its officers, agents, and employees against all suits of law or in equity resulting from patent and copyright infringement concerning the Contractor's performance or products produced under the terms of the contract.

Inspection and Acceptance

- a. No equipment, supplies, and/or services received by MoDOT pursuant to a contract shall be deemed accepted until MoDOT has had reasonable opportunity to inspect said equipment, supplies, and/or services.
- b. All equipment, supplies, and/or services which do not comply with the specifications and/or requirements or which are otherwise unacceptable or defective may be rejected. In addition, all equipment, supplies, and/or services which are discovered to be defective or which do not conform to any warranty of the Contractor upon inspection (or at any later time if the defects contained were not reasonably ascertainable upon the initial inspection) may be rejected.
- c. The MHTC reserves the right to return any such rejected shipment at the Contractor's expense for full credit or replacement and to specify a reasonable date by which replacements must be received.
- d. The MHTC's right to reject any unacceptable equipment, supplies, and/or services shall not exclude any other legal, equitable or contractual remedies the MHTC may have.

Status of Independent Contractor

- a. The Contractor represents itself to be an independent Contractor offering such services to the general public and shall not represent itself or its employees to be an employee of the MHTC. Therefore, the Contractor shall assume all legal and financial responsibility for taxes, FICA, employee fringe benefits, workers' compensation, employee insurance, minimum wage requirements, overtime, etc., and agrees to indemnify, save and hold the MHTC, its officers, agents and employees harmless from and against any and all losses (including attorney fees) and damage of any kind related to such matters.

Indemnification

- a. The Offeror shall defend, indemnify and hold harmless the Commission, including its members and department employees, from any claim or liability whether based on a claim for damages to real or personal property or to a person for any matter relating to

or arising out of the Offeror's performance of its obligations under this Agreement.

DEFINITIONS

Architect/Engineer/Designer: When the term "Architect or Engineer or Designer" is used herein, it shall refer to Larry Carver, [Senior Facilities Designer], (573) 526-7934 or Doug Record [General Services Manager - Facilities] Missouri Department of Transportation, General Services (573) 526-7937, FAX (573) 526-6948.

MoDOT Inspector or Facility Operations Supervisor: When the term "MoDOT Inspector or Facility Operations Supervisor" is used herein, it shall refer to those MoDOT individuals authorized to perform site inspections by Todd Roth, [Facility Operations Supervisor] District 3, General Services Division, (573) 231-6593, FAX (573) 248-2613

Owner: When the term "Owner" is used herein, it shall refer to Missouri Department of Transportation (MoDOT).

PREFERENCES IN PURCHASING PRODUCTS

DATE: _____

The bidders attention is directed to Section 34.076 RSMo 2000 which gives preference to Missouri corporations, firms, and individuals when letting contracts or purchasing products.

Bids/Quotations received will be evaluated on the basis of this legislation.

All vendors submitting a bid/quotation must furnish ALL information requested below.

FOR CORPORATIONS:

State in which incorporated: _____

FOR OTHERS:

State of domicile: _____

FOR ALL VENDORS:

List address of Missouri offices or places of business:

THIS SECTION MUST BE COMPLETED AND SIGNED:

FIRM NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

BY (signature required): _____

Federal Tax I.D. #: _____ if no Federal Tax I.D. # - list Social Security #: _____

NOTE: For bid/quotation to be considered, the "Preference in Purchasing Products" form must be on file in the General Services (Procurement) Division and must be dated in the current calendar year.

MISSOURI DOMESTIC PRODUCTS PROCUREMENT ACT

The bidder’s attention is directed to the Missouri Domestic Products Procurement Act, Sections 34.350 to 34/359, RsMO, which requires all manufactured goods or commodities used or supplied in the performance of this contract or any subcontract to be manufactured or produced in the United States.

Section 34.355, RsMO, requires the vendor or contractor to certify his compliance with Section 34.353 and, if applicable, Section 34.359, RsMO, at the time of bidding and prior to payment. Failure to comply with Section 34.353, RsMO, during the performance of the contract and to provide certification of compliance prior to payment will result in nonpayment for those goods or commodities.

Section 34.353.2, RsMO, specifies that it does not apply where the total contract is less than Twenty-Five Thousand Dollars (\$25,000.00). If your total bid is Twenty-Five Thousand Dollars (\$25,000.00) or more, you must complete this form as directed below.

Failure to complete and return this document with this bid will cause the State to presume the manufactured goods or products listed in the bid are not manufactured or produced in the United States, and the bid will be evaluated on that basis. Please read the certification appearing below on this form.

[] If all the goods or products specified in the attached bid which the bidder proposes to supply to the State shall be manufactured or produced in the “United States” as defined in Section 34.350, RsMO, check the box at left.

[] If only one item of any particular goods or products specified in the attached bid is manufactured or produced in the “United States” as defined in Section 34.350, RsMO, check the box at left and list the items (or item number) here:

[] If any or all of the goods or products specified in the attached bid which the bidder proposes to supply to the State are not manufactured or produced in the “United States” as defined in Section 34.350, RsMO, then: (a) check the box at left; (b) list below, by item (or item number), the country other than the United States where each good or product is manufactured or produced; and (c) check the boxes to the left of the paragraphs below if applicable and list the corresponding items (or item numbers) in the spaces provided.

Item (or item number)	Location Where Item Manufactured or Produced

(attach an additional sheet if necessary)

[] The following specified goods or products cannot be manufactured or produced in the United States in sufficient quantities or in time to meet the contract specifications. Items (or item numbers): _____

[] The following specified goods or products must be treated as manufactured or produced in the United States, in accordance with an existing treaty, law, agreement, or regulation of the United States, including a treaty between the United States and any foreign country regarding export-import restrictions or international trade. Items (or item numbers): _____

CERTIFICATION

By submitting this document, completed as directed above, with a bid, the bidder certifies under penalty of making false declaration (Section 575.060, RsMO) that the information contained in this document is true, correct and complete, and may be relied upon by the State in determining the bidders qualifications under and in compliance with the Missouri Domestic Products Procurement Act.

The bidder’s failure to complete and return this document with the bid as directed above will cause the State to presume the manufactured goods or products listed in the bid are not manufactured or produced in the United States, and the bid will be evaluated on that basis pursuant to Section 34.353.3(2), RsMO.

MISSOURI SERVICE-DISABLED VETERAN BUSINESS PREFERENCE

By virtue of statutory authority, RSMo 34.074, a preference will be given all contracts for the performance of any job or service to service-disabled veteran business either doing business as Missouri firms, corporations, or individuals; or which maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less or whenever competing bids, in their entirety, are comparable.

Definitions:

Service-Disabled Veteran is defined as any individual who is disabled as certified by the appropriate federal agency responsible for the administration of veterans' affairs.

Service-Disabled Veteran Business is defined as a business concern:

- a. Not less than fifty-one (51) percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than fifty-one (51) percent of the stock of which is owned by one or more service-disabled veterans; and
- b. The management and daily business operations of which are controlled by one or more service-disabled veterans.

If an bidder meets the definitions of a service-disabled veteran and a service-disabled veteran business as defined in 34.074 RSMo and is either doing business as a Missouri firm, corporation, or individual; or maintains a Missouri office or place of business, the bidder must provide the following with the proposal in order to receive the Missouri service-disabled veteran business preference over a non-Missouri service-disabled veteran business when the quality of performance promised is equal or better and the price quoted is the same or less or whenever competing proposals, in their entirety, are comparable:

- a. A copy of a letter from the Department of Veterans Affairs (VA), or a copy of the bidder's discharge paper (DD Form 214, Certificate of Release or Discharge from Active Duty) from the branch of service the bidder was in, stating that the bidder has a service-connected disability rating ranging from 0 to 100% disability; and
- b. A completed copy of this exhibit

(NOTE: For ease of evaluation, please attach copy of the above-referenced letter from the VA or a copy of the bidder's discharge paper to this Exhibit.)

By signing below, I certify that I meet the definitions of a service-disabled veteran and a service-disabled veteran business as defined in 34.074 RSMo and that I am either doing business as a Missouri firm, corporation, or individual; or maintain Missouri offices or places of business at the location(s) listed below.

Veteran Information

Business Information

Service-Disabled Veteran's Name, (Please Print)

Service-Disabled Veteran Business Name

Service-Disabled Veteran's Signature

Missouri Address of Service-Disabled Veteran Business

00301

BID FORM

To: The Missouri Highway and Transportation Commission
PO Box 270
Jefferson City, Missouri 65102

- 1. The undersigned, having examined the proposed Contract Documents titled: **“9-101102 Wash Bay -Shelbina & Mexico”** and having visited the site and examined the conditions affecting the work, hereby proposes and agrees to furnish all labor, materials, equipment and everything which may be necessary or incidental thereto, as proposed by said Contract Documents, all to the satisfaction of the General Services-Facility Operations Supervisor or designated representative of the Missouri Department of Transportation and the Missouri Highway and Transportation Commission, for the stipulated sum of:

Shelbina Wash Bay.....DOLLARS (\$_____.)
 Mexico Wash Bay.....DOLLARS (\$_____.)

- 2. The undersigned, acknowledges having examined and being familiar with the contract documents including the drawings, the Instructions to Bidders, General Conditions, Supplementary Conditions and the body of technical specifications.
- 3. The undersigned acknowledges receipt of Addenda number _____ through _____ inclusive.
- 4. Enclosed with this bid is bid security in the amount of not less than 5% of the bidder's proposed Contract Sum, the amount being _____ DOLLARS (\$_____).

IF AN INDIVIDUAL

Name of individual

Residence address

Social Security Number

Telephone Number

Firm Name, If Any

Address for communications

Signature

IF A PARTNERSHIP

Name of Partnership

(State Name and Residence Address of All Partners)

Partner

Residence Address

Partner

Residence Address

Address for Communications

Signature of Either Partner

Telephone Number

Federal Tax I.D. Number

IF A CORPORATION

Name of Corporation

Incorporated under the laws of the
State of _____

Name and Title of Officer

Corporate License No. _____
(If a corporation organized in a state other than
Missouri, attach Certificate of Authority to do
business in the State of Missouri.)

Signature of officer

Federal Tax I.D. Number

Address for Communications

(ATTEST)

Telephone Number

(SEAL) Secretary

(Each bidder must complete the Bid Form by signing in the proper signature line above and by supplying the required information called for in connection with the signature. The information called for is necessary in the proper preparation of the contract and performance bond.)

00430

SUBCONTRACTOR LISTING

1. For portions of Work equaling or exceeding 1% of the total proposed Contract Sum, the undersigned proposes to use the following subcontractors. Except as otherwise approved by the Owner, the undersigned proposes to perform all other portions of the Work with his own forces.

2. Portion of the Work:	Subcontractor name and address:
_____	_____

_____	_____

_____	_____

USE ADDITIONAL SHEETS
IF REQUIRED

PROVIDE SIGNATURE
IDENTICAL TO THAT
SHOWN ON THE BID FORM

BIDDER:

by _____

00600

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____,
as Principal, and _____,
as Surety, are held firmly bound unto the State of Missouri (acting by and through the Missouri Highway and
Transportation Commission) in the penal sum of

_____ Dollars
(\$_____), to be paid to the State of Missouri, or the Missouri Highway and Transportation
Commission, to be credited to the State Road Fund and Principal and Surety binding themselves, their heirs,
executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20_____

THE CONDITION OF THIS OBLIGATION is such that:
WHEREAS, the Principal is submitting herewith a bid to the Missouri Highway and Transportation Commission on
Route(s) _____,
in _____ County(ies), Project(s) _____,
for construction or improvement as set out in said proposal.

NOW THEREFORE, if the Missouri Highway and Transportation Commission shall accept the bid of the Principal,
and if said Principal shall properly execute and deliver to the Missouri Highway and Transportation Commission the
Contract, Contract Bond, Specifications and evidence of insurance coverage in compliance with the requirements of
the Proposal, to the satisfaction of the Missouri Highway and Transportation Commission, then this obligation shall
be void and of no effect, otherwise to remain in full force and effect.

In the event the said Principal shall, in the judgment of the Missouri Highway and Transportation Commission, fail to
comply with any requirement as set forth in the preceding paragraph, then the Stat of Missouri, acting through the
Missouri Highway and Transportation Commission, shall immediately and forthwith be entitled to recover the fees,
and any other expense of recovery.

Principal Surety

By _____
Attorney in Fact (SEAL)

Attest: (CORPORATE SEAL)

Corporate Secretary

Note: This bond must be executed by the Principal and by a Corporate Surety authorized to conduct
surety business in the State of Missouri.

END OF SECTION

01019

CONTRACT CONSIDERATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Schedule of values.
- B. Application for payment.
- C. Change procedures.
- D. Alternatives.

1.2 RELATED SECTIONS

- A. Section 01600 - Material and Equipment: Product substitutions.

1.3 SCHEDULE OF VALUES

- A. Submit a printed schedule on Contractor's standard form. Electronic media printout will be considered.
- B. Submit Schedule of Values in duplicate within 20 days after date of Owner-Contractor Agreement.
- C. Revise schedule to list approved Change Orders, with each Application For Payment.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit four copies of each application on Contractor's electronic media driven form.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: 30 days.
- D. Submit waiver of liens from vendors.
- E. Include an updated construction progress schedule.
- F. Certified payroll records.

1.5 CHANGE PROCEDURES

- A. The Architect/Engineer/Designer may issue a Notice of Change that includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required.
- B. The Contractor may propose changes by submitting a request for change to the Architect/Engineer/Designer describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, the effect on the Contract Sum/Price and Contract Time, and a statement describing the effect on Work by the MoDOT District or other Contractors.
- C. Stipulated Sum/Price Change Order: Based on Notice of Change and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Architect/Engineer/Designer.
- D. Construction Change Directive: Architect/Engineer/Designer may issue a directive instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute the change.

- E. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Architect/Engineer/Designer will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.
- F. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- G. Execution of Change Orders: Architect/Engineer/Designer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.6 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specify requirements.
- B. If, in the opinion of the Architect/Engineer/Designer, it is not practical to remove and replace the Work, the Architect/Engineer/Designer will direct an appropriate remedy or adjust payment.

1.7 ALTERNATIVES

- A. Accepted Alternatives will be identified in Owner-Contractor Agreement.

END OF SECTION

COORDINATION AND MEETINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and project conditions.
- B. Field engineering.
- C. Preconstruction meeting.
- D. Site mobilization meeting.
- E. Progress meetings.
- F. Preinstallation meetings.
- G. Equipment electrical characteristics and components.
- H. Examination.
- I. Preparation.
- J. Cutting and Patching.
- K. Alteration project procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to and placing in service, such equipment.
- C. Coordinate space requirements, supports, and installation of mechanical and electrical Work, which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, except as otherwise indicated, conceal pipes, ducts and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion.
- F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 FIELD ENGINEERING

- A. Employ a Land Surveyor registered in the State of Missouri and acceptable to Architect/Engineer/Designer.
- B. Owner will locate and protect survey control and reference points.
- C. Control datum for survey is that established by Owner provided survey.
- D. Verify setbacks and easements; confirm drawing dimensions and elevations.
- E. Provide field engineering services. Establish elevations, lines and levels, utilizing recognized engineering survey practices.

1.4 PRECONSTRUCTION MEETING

- A. Architect/Engineer/Designer will schedule a meeting after Notice of Award.

- B. Attendance Required: District engineer or representative, Architect/Engineer/Designer and Contractor.
- C. Record minutes and distribute copies within 5 days after meeting to participants, with two copies to District Engineer, Architect/Engineer/Designer, participants and those affected by decisions made.

1.5 SITE MOBILIZATION MEETING

- A. Architect/Engineer/Designer will schedule a meeting at the Project site prior to Contractor occupancy.
- B. Architect/Engineer/Designer will record minutes and distributes copies within 5 days after meeting to participants, with two copies to Architect/Engineer/Designer, participants and those affected by decisions made.

1.6 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at when arranged by Architect/Engineer/Designer.
- B. Architect/Engineer/Designer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, District engineer representative, Architect/Engineer/Designer, as appropriate to agenda topics for each meeting.
- D. Agenda:
 - 1. Review of Work progress.
 - 2. Field observations, problems, and decisions.
 - 3. Identification of problems, which impede planned progress.
 - 4. Maintenance of progress schedule.
 - 5. Corrective measures to regain projected schedules.
 - 6. Coordination of projected progress.
 - 7. Effect of proposed changes on progress schedule and coordination.
- E. Record minutes and distributes copies within 5 days after meeting to participants and those affected by decisions made.

1.7 PREINSTALLATION MEETING

- A. When required in individual specification sections, convene a pre-installation meeting at the site prior to commencing work of the section.
- B. Notify Architect/Engineer/Designer seven days in advance of meeting date.
- C. Prepare agenda and preside at meeting:
 - 1. Review conditions of installation, preparation and installation procedures.
 - 2. Review coordination with related work.
- D. Record minutes and distributes copies within 5 days after meeting to participants and those affected by decisions made.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements, which affect:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Work of Owner or separate contractor.
- C. Execute cutting, fitting, and patching to complete Work, and to:
 - 1. Uncover Work to install or correct ill-timed Work.
 - 2. Remove and replace defective and non-conforming Work.
 - 3. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Cut masonry and concrete materials using masonry saw or core drill.
- E. Fit Work tight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
- F. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- G. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.
- H. Identify hazardous substances or conditions exposed during the Work to the Architect/Engineer/Designer for decision or remedy.

3.2 ALTERATION PROJECT PROCEDURES

- A. Materials: As specified in Product sections; match existing Products and work for patching and extending work.
- B. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- C. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Architect/Engineer/Designer for review.
- D. Patch or replace portions of existing surfaces that are damaged, lifted, discolored or showing other imperfections.
- E. Finish surfaces as specified in individual Product sections.

END OF SECTION

01300

SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed Products list.
- D. Product Data.
- E. Shop Drawings.
- F. Samples.
- G. Design data.
- H. Test reports.
- I. Certificates.
- J. Manufacturer's instructions.
- K. Manufacturer's field reports.
- L. Erection drawings.
- M. Construction photographs.

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals
- B. Section 01400 - Quality Control: Manufacturers' field services and reports.
- C. Section 01700 - Contract Closeout: Contract warranties, bonds, manufacturers' certificates and closeout submittals.

1.3 REFERENCES

- A. AGC Associated General Contractors of America publication "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry".

1.4 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Architect/Engineer/Designer accepted form.
- B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number and specification section number, as appropriate.
- C. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- D. Schedule submittals to expedite the Project, and deliver to Architect/Engineer/Designer at business address. Coordinate submission of related items.
- E. For each submittal for review, allow 15 days excluding delivery time to and from the contractor.
- F. Identify variations from Contract Documents and Product or system limitations, which may be detrimental to successful performance of the completed Work.
- G. Submittals not requested will not be recognized or processed.

1.5 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedule in duplicate within 15 days after date established in Notice to Proceed.
- B. Revise and resubmit as required.
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Submit a horizontal bar chart with separate line for each major portion of Work or operation, identifying first workday of each week.

1.6 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation and reference standards.

1.7 PRODUCT DATA

- A. Product Data For Review:
 - 1. Submitted to Architect/Engineer/Designer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.
- B. Product Data For Information:
 - 1. Submitted for the Architect/Engineer/Designer's knowledge as contract administrator or for the Owner.
- C. Product Data For Project Closeout:
 - 1. Submitted for the Owner's benefit during and after project completion.
- D. Submit the number of copies, which the Contractor requires, plus two copies that will be retained by the Architect/Engineer/Designer.
- E. Mark each copy to identify applicable products, models, options and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- F. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700 - CONTRACT CLOSEOUT.

1.8 SHOP DRAWINGS

- A. Shop Drawings For Review:
 - 1. Submitted to Architect/Engineer/Designer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.
- B. Shop Drawings For Information:
 - 1. Submitted for the Architect/Engineer/Designer's knowledge as contract administrator or for the Owner.

- C. Shop Drawings For Project Closeout:
 - 1. Submitted for the Owner's benefit during and after project completion.
- D. Indicate special utility and electrical characteristics, utility connection requirements and location of utility outlets for service for functional equipment and appliances.
- E. Submit in the form of one reproducible transparency and one opaque reproduction.

1.9 SAMPLES

- A. Samples For Review:
 - 1. Submitted to Architect/Engineer/Designer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.
- B. Samples For Information:
 - 1. Submitted for the Architect/Engineer/Designer's knowledge as contract administrator or for the Owner.
- C. Samples For Selection:
 - 1. Submitted to Architect/Engineer/Designer for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes for Architect/Engineer/Designer selection.
 - 3. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

1.10 DESIGN DATA

- A. Submit for the Architect/Engineer/Designer's knowledge as contract administrator or for the Owner.
- B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.11 TEST REPORTS

- A. Submit for the Architect/Engineer/Designer's knowledge as contract administrator or for the Owner.
- B. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.12 CERTIFICATES

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to Architect/Engineer/Designer, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product but must be acceptable to Architect/Engineer/Designer.

1.13 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery,

storage, assembly, installation, and start-up, adjusting and finishing, to Architect/Engineer/Designer for delivery to owner in quantities specified for Product Data.

- B. Indicate special procedures, perimeter conditions requiring special attention and special environmental criteria required for application or installation.
- C. Refer to Section 01400 - Quality Control, Manufacturers' Field Services article.

1.14 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for the Architect/Engineer/Designer's benefit as contract administrator or for the Owner.
- B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.15 ERECTION DRAWINGS

- A. Submit drawings for the Architect/Engineer/Designer's benefit as contract administrator or for the Owner.
- B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- C. Data indicating inappropriate or unacceptable Work may be subject to action by the Architect/Engineer/Designer or Owner.

END OF SECTION

01400

QUALITY CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances
- C. References and standards.
- D. Mock-up.
- E. Inspecting and testing laboratory services.
- F. Manufacturers' field services.

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals: Submission of manufacturers' instructions and certificates.
- B. Section 01600 - Material and Equipment: Requirements for material and product quality.
- C. Section 01650 - Starting of Systems.

1.3 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer/Designer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.4 TOLERANCES

- A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer/Designer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.5 REFERENCES AND STANDARDS

- A. For Products or workmanship specified by association, trade or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

- B. Conform to reference standard by date of issue current on date for receiving bids or date specified in the individual specification sections, except where a specific date is established by code.
- C. Neither the contractual relationships, duties or responsibilities of the parties in Contract nor those of the Architect/Engineer/Designer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.6 TESTING SERVICES

- A. Contractor to provide all testing services as called out in these specifications.
- B. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the Architect/Engineer/Designer or the Owner.
- C. Testing does not relieve Contractor to perform Work to contract requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be performed by the same MoDOT personnel on instructions by the Architect/Engineer/Designer.

1.7 INSPECTION SERVICES

- A. Owner will employ MoDOT Personnel to perform inspection.
- B. Inspecting may occur on or off the project site. Perform off-site inspecting as required by the Architect/Engineer/Designer or the Owner.
- C. Inspecting does not relieve Contractor to perform Work to contract requirements.

1.8 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and the balancing of equipment as applicable and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Refer to Section 01300 - SUBMITTALS, MANUFACTURERS' FIELD REPORTS article.

PART 2 EXECUTION

2.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.

2.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities: Electricity, telephone service, facsimile service and sanitary facilities.
- B. Temporary Controls: enclosures and fencing, protection of the Work and water control.
- C. Construction Facilities: progress cleaning and temporary buildings.

1.2 TEMPORARY ELECTRICITY

- A. Cost: By Contractor; pay for temporary power service furnished by MoDOT.

1.3 TELEPHONE SERVICE

- A. Provide, maintain, and pay for telephone service to field office and Architect/Engineer/Designer's field office at time of project mobilization.

1.4 FACSIMILE SERVICE

- A. Provide, maintain and pay for facsimile service and a dedicated telephone line to field office and Architect/Engineer/Designer's field office at time of project mobilization.

1.5 TEMPORARY WATER SERVICE

- A. Connect to existing water source as directed for construction operations at time of project mobilization.
- B. Contractor will reimburse Owner for water used in construction as agreed upon at time of project mobilization.

1.6 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

1.7 FENCING

- A. Construction: Use plastic mesh safety fencing or better.
- B. Provide 48" high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.8 WATER CONTROL

- A. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.9 EXTERIOR ENCLOSURES

- A. Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.10 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.
- C. Provide protective coverings at walls, projections, jambs, sills and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

1.11 SECURITY

- A. Provide security and facilities to protect Work and existing facilities and Owner's operations from unauthorized entry, vandalism or theft.
- B. Coordinate with Owner's security program.

1.12 ACCESS ROADS

- A. Provide and maintain access to fire hydrants, free of obstructions.
- B. Provide means of removing mud from vehicle wheels before entering streets.
- C. Designated existing on-site roads may be used for construction traffic.

1.13 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris and rubbish from site periodically and dispose off-site.
- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.14 FIELD OFFICES AND SHEDS

- A. Office: Weather tight, with lighting, electrical outlets, heating and ventilating equipment and equipped with drawing rack and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities and materials prior to Final Application for Payment inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

01600

MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Transportation and handling.
- C. Storage and protection.
- D. Product options.
- E. Substitutions.

1.2 RELATED SECTIONS

- A. Instructions to Bidders: Product options and substitution procedures.
- B. Section 01400 - Quality Control: Product quality monitoring.

1.3 PRODUCTS

- A. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- B. Provide interchangeable components of the same manufacture for components being replaced.

1.4 TRANSPORTATION AND HANDLING

- A. Transport and handle Products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct and products are undamaged.
- C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement or damage.

1.5 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive Products in weather tight, climate controlled, enclosures in an environment favorable to Product.
- D. For exterior storage of fabricated Products, place on sloped supports above ground.
- E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement or damage.

- I. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

1.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description is acceptable.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

1.7 SUBSTITUTIONS

- A. Architect/Engineer/Designer will consider requests for Substitutions only within 15 days after date established in Notice to Proceed.
- B. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
 - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 - 2. Will provide the same warranty for the Substitution as for the specified Product.
 - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
 - 1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 - 2. Submit shop drawings, product data and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
 - 3. The Architect/Engineer/Designer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

01650

STARTING OF SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Starting systems.
- B. Demonstration and instructions.
- C. Testing, adjusting and balancing.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control: Manufacturers field reports.
- B. Section 01700 - Contract Closeout: System operation and maintenance data and extra materials.

1.3 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect/Engineer/Designer seven days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, and control sequence and for conditions that may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable manufacturer's representative or Contractors' personnel in accordance with manufacturers' instructions.
- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up and to supervise placing equipment or system in operation.
- H. Submit a written report in accordance with Section 01300 that equipment or system has been properly installed and is functioning correctly.

1.4 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Final Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
- D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance and shutdown of each item of equipment at agreed time, at equipment location.

- E. Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instruction.
- F. The amount of time required for instruction on each item of equipment and system that's specified in individual sections.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Operation and maintenance data.
- F. Spare parts and maintenance Products.
- G. Warranties.

1.2 RELATED SECTIONS

- A. Section 01500 - Construction Facilities and Temporary Controls: Progress cleaning.
- B. Section 01650 - Starting of Systems: System start-up, testing, adjusting and balancing.

1.3 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer/Designer's review.
- B. Provide submittals to Owner that is required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments and sum remaining due.
- D. Owner will occupy portions of the building as specified in Section 01010.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- B. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- C. Clean or replace filters of operating equipment used during construction and/or adjustment.
- D. Clean debris from roofs, gutters, downspouts and drainage systems.
- E. Clean site; sweep paved areas, rake clean landscaped surfaces.
- F. Remove waste and surplus materials, rubbish and construction facilities from the site.

1.5 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.6 PROJECT RECORD DOCUMENTS

- A. Store record documents separate from documents used for construction.

- B. Record information concurrent with construction progress.
- C. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- D. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish main floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract drawings.
- E. Submit documents to Architect/Engineer/Designer's with claim for final Application for Payment.

1.7 OPERATION AND MAINTENANCE DATA

- A. Submit data bound in 8-1/2 x 11 inch (A4) text pages, three D side ring binders with durable plastic covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project and subject matter of binder when multiple binders are required.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Submit 1 draft copy of completed volumes 15 days prior to final inspection. This copy will be reviewed and returned with Architect/Engineer/Designer comments. Revise content of all document sets as required prior to final submission.
- E. Submit two sets of revised final volumes, within 10 days after final inspection.

1.8 SPARE PARTS AND MAINTENANCE PRODUCTS

- A. Provide spare parts, maintenance, and extra Products in quantities specified individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

1.9 WARRANTIES

- A. Execute and assemble transferable warranty documents from Subcontractors, suppliers and manufacturers.
- B. Submit prior to final Application for Payment.
- C. For items of Work delayed beyond date of Final Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of the warranty period.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

02100

SITE PREPARATION

PART 1 SCOPE

- A. The contractor shall visit the site and carefully examine the conditions of the premises to determine the amount of work and materials required for the work necessary to prepare the site in every respect for the construction of the parking lot, driveways, final grading, as shown on the plans.
- B. The contractor shall be responsible for determining the quantities of materials to be excavated and handled and for the amount of backfilling, filling and grading to be done in order to perform all work required on the plans.
- C. Included in the site grading is final seeding and mulching.

PART 2 SEEDING AND MULCHING

- A. An area 50' wide surrounding the new building and parking lot shall be seeded and mulched.
- B. Fertilizing:
 - 1. Soil Neutralization: Shall be at the rate of 1000 pounds of effective neutralization per acre as per Specification Section 801.2.2 of the Missouri Standard Specifications for Highway Construction.
 - 2. Commercial Fertilizer: In accordance with Specification Section 801.2.3 of the Missouri Standard Specifications for Highway Construction, fertilizers shall be applied at the following rates:
 - (a) Nitrogen 80 lb. per acre
 - (b) Phosphoric Acid 240 lb. per acre
 - (c) Potash 80 lb. per acre
- C. Seeding: Seed shall be Champion 3 + 3 Fescue Blend as sold by Mangelsdorf Seed Company, or equivalent as approved by the owner. The seed shall be applied at a rate of 400 lb. per acre.
- D. Mulching: The mulch shall be Type 1 mulch as per Specification Section 802 of the Missouri Standard Specifications for Highway Construction

END OF SECTION

EXCAVATING, BACKFILLING AND COMPACTING

PART 1 GENERAL

1.1 SUMMARY

- A. Excavate, backfill, compact, and grade the site to the elevations shown on the Drawings, as specified herein, and as needed to meet the requirements of the construction shown in the Contract Documents.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Use equipment adequate in size, capacity and numbers to accomplish the work of this Section in a timely manner.
- C. In addition to complying with requirements of governmental agencies having jurisdiction, comply with the directions of the MoDOT Inspector.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Comply with pertinent provisions of Section 01620.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

- A. Fill and backfill materials:
 - 1. Provide soil materials free from organic matter and deleterious substances, containing no rocks or lumps over 6" in greatest dimension, and with not more than 15% of the rocks or lumps larger than 2-3/8" in their greatest dimension.
 - 2. Fill material is subject to the approval of the MoDOT Inspector, and are those materials removed from excavations or imported from off-site borrow areas; predominantly granular, non-expansive soils free from roots and other deleterious matter.
 - 3. Do not permit rocks having a dimension greater than 1" in the upper 12" of fill or embankment.
 - 4. Cohesionless material used for structural backfill. Provide sand free from organic material and other foreign matter, and as approved by the MoDOT Inspector.
 - 5. Where granular base is called for under building slabs, provide aggregate complying with requirements of Section 03300 of these Specifications.

2.2 WEED KILLER

- A. Provide a dry, free-flowing, dust-free chemical compound, soluble in water, capable of inhibiting growth of vegetation, and approved for use on this Work by governmental agencies having jurisdiction.

2.3 TOPSOIL

- A. Where and if shown on the Drawings or otherwise required, provide topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region, capable of sustaining healthy plant life, and reasonably free from subsoil, roots, heavy or stiff clay, stones larger than 2" in greatest dimension, noxious weeds, sticks, brush, litter and other deleterious matter.
- B. Obtain topsoil/backfill from sources within the project limits as approved by Owner, or provide imported topsoil obtained from sources outside the project limits or from both sources.

2.4 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect/Engineer/Designer.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

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

3.2 FINISH ELEVATIONS AND LINES

- A. Comply with pertinent provisions of Section 01050.

3.3 PROCEDURES

- A. Utilities:
 - 1. Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at no additional cost to the Owner.
 - 2. If active utility lines are encountered and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.
 - 3. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.
 - 4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Architect/Engineer/Designer and secure his instructions.
 - 5. Do not proceed with permanent relocation of utilities until written instructions are received from the Architect/Engineer/Designer.
- B. Protection of persons and property:
 - 1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.
 - 2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
 - 3. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, washout and other hazards created by operations under this Section.

- C. Dewatering:
 1. Remove all water, including rainwater encountered during trench and sub-structure work to an approved location by pumps, drains and other approved methods.
 2. Keep excavations and site construction area free from water.
- D. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors and to other work being performed on or near the site.
- E. Maintain access to adjacent areas at all times.

3.4 EXCAVATING

- A. Perform excavating of every type of material encountered within the limits of the Work to the lines, grades and elevations indicated and specified herein.
- B. Satisfactory excavated materials:
 1. Transport to and place in, fill or embankment areas within the limits of the Work.
- C. Unsatisfactory excavated materials:
 1. Excavate to a distance below grade as directed by the MoDOT Inspector and replace with satisfactory materials.
 2. Include excavation of unsatisfactory materials and replacement by satisfactory materials, as parts of the work of this Section.
- D. Surplus materials:
 1. Dispose of unsatisfactory excavated material, and surplus satisfactory excavated material, away from the site at disposal areas arranged and paid for by the Contractor.
- E. Excavation of rock:
 1. Where rocks, boulders, granite, or similar material is encountered, and where such material cannot be removed or excavated by conventional earth moving or ripping equipment, take required steps to proceed with the general grading operations of the Work, and remove or excavate such material by means which will neither cause additional cost to the Owner nor endanger buildings or structures whether on or off the site.
 2. Do not use explosives without written permission from the Architect/Engineer/Designer.
- F. Excavate and backfill in a manner and sequence that will provide proper drainage at all times.
- G. Borrow:
 1. Obtain material required for fill or embankment in excess of that produced within the grading limits of the Work from borrow areas selected and paid for by the Contractor and approved by the MoDOT Inspector.
- H. Ditches and gutters:
 1. Cut accurately to the cross sections, grades and elevations shown.
 2. Maintain excavations free from detrimental quantities of leaves, sticks, trash, and other debris until completion of the Work.
 3. Dispose of excavated materials as shown on the Drawings or directed by the MoDOT Inspector; except do not, in any case, deposit materials less than 3'-0" from the edge of a ditch.
- I. Unauthorized excavation:
 1. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific instruction from the Architect/Engineer/Designer or the MoDOT Inspector.

2. Under footings, foundations, or retaining walls:
 - a. Fill unauthorized excavations by extending the indicated bottom elevation of the footing or base to the excavation bottom, without altering the required top elevation.
 - b. When acceptable to the soil engineer, lean concrete fill may be used to bring the bottom elevation to proper position.
 3. Elsewhere backfill and compact unauthorized excavations as specified for authorized excavations, unless otherwise directed by the soil engineer.
- J. Stability of excavations:
1. Slope sides of excavations to 1:1 or flatter, unless otherwise directed by the MoDOT Inspector.
 2. Shore and brace where sloping is not possible because of space restrictions or stability of the materials being excavated.
 3. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.
- K. Excavating for structures:
1. Conform to elevations and dimensions shown within a tolerance of 0.10 ft, and extending a sufficient distance from footings and foundations to permit placing and removing concrete formwork, installation of services, other construction required and for inspection.
 2. In excavating for footings and foundations, take care not to disturb bottom of excavation:
 - a. Excavate by hand tools to final grade just before concrete is placed.
 - b. Trim bottoms to required lines and grades to leave solid base to receive concrete.
 3. Excavate for footings and foundations only after general site excavating, filling and grading are complete.
- L. Excavating for pavements:
1. Cut surface under pavements to comply with cross sections, elevations and grades.
- M. Cold weather protection:
1. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F.

3.5 FILLING AND BACKFILLING

- A. General:
1. For each classification listed below, place acceptable soil material in layers to required subgrade elevations.
 2. In excavations:
 - a. Use satisfactory excavated or borrowed materials.
 3. Under building slabs:
 - a. Use subbase materials.
 4. Under building slabs:
 - a. Use granular fill, if so called for on the Drawings, complying with aggregate acceptable under Section 03300 of these Specifications.
- B. Backfill excavations as promptly as progress of the Work permits, but not until completion of the following.
1. Acceptance of construction below finish grade including, where applicable, dampproofing and waterproofing.
 2. Inspecting, testing, approving and recording locations of underground utilities.
 3. Removing concrete formwork.
 4. Removing shoring and bracing and backfilling of voids with satisfactory materials.
 5. Removing trash and debris.
 6. Placement of horizontal bracing on horizontally supported walls.

- C. Ground surface preparation:
 - 1. Remove vegetation, debris, unsatisfactory soil materials, obstructions and deleterious matter from ground surface prior to placement of fills.
 - 2. Plow, strip, or break up sloped surfaces steeper than one vertical to four horizontal so that fill material will bond with existing surface.
 - 3. When existing ground surface has a density less than that specified under "compacting" for the particular area, break up the ground surface, pulverize, moisture-condition to the optimum moisture content and compact to required depth and percentage of maximum density.

- D. Placing and compacting:
 - 1. Place backfill and fill materials in layers not more than 8" in loose depth.
 - 2. Before compacting, moisten or aerate each layer as necessary to provide the optimum moisture content.
 - 3. Compact each layer to required percentage of maximum density for area.
 - 4. Do not place backfill or fill material on surfaces that are muddy, frozen or containing frost or ice.
 - 5. Place backfill and fill materials evenly adjacent to structures, to required elevations.
 - 6. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around the structure to approximately the same elevation in each lift.
 - 7. Where the construction includes basement or other underground walls having structural floors over them, do not backfill such walls until the structural floors are in place and have attained sufficient strength to support the walls.

3.6 GRADING

- A. General:
 - 1. Uniformly grade the areas within limits of grading under this Section, including adjacent transition areas.
 - 2. Smooth the finished surfaces within specified tolerance.
 - 3. Compact with uniform levels or slopes between points where elevations are shown on the Drawings, or between such points and existing grades.
 - 3. Where a change of slope is indicated on the Drawings, construct a rolled transition section having a minimum radius of approximately 8'0", unless adjacent construction will not permit such a transition or if such a transition defeats positive control of drainage.

- B. Grading outside building lines:
 - 1. Grade areas adjacent to buildings to achieve drainage away from the structures and to prevent ponding.

 - 2. Finish the surfaces to be free from irregular surface changes, and:
 - a. Shape the surface of areas scheduled to be under walks to line, grade and cross-section, with finished surface not more than 0.10 ft above or below the required subgrade elevation.
 - b. Shape the surface of areas scheduled to be under pavement to line, grade and cross-section, with finished surface not more than 0.05 ft above or below the required subgrade elevation.

3.7 COMPACTING

- A. Control soil compaction during construction to provide the minimum percentage of density specified for each area as determined according to ASTM D1557.

- B. Provide not less than the following maximum density of soil material compacted at optimum moisture content for the actual density of each layer of soil material in place and as approved by the

MoDOT Inspector.

1. Structures:
 - a. Compact the top 8" of subgrade and each layer of fill material or backfill material at 90% of maximum density.
2. Lawn and unpaved areas:
 - a. Compact the top 8" of subgrade and each layer of fill material or backfill material at 90% of maximum density.
 - b. Compact the upper 12" of filled areas, or natural soils exposed by excavating, at 85% of maximum density.
3. Walks:
 - a. Compact the top 8" of subgrade and each layer of fill material or backfill material at 90% of maximum density.
4. Pavements:
 - a. Compact the top 8" of subgrade and each layer of fill material or backfill material at 90% of maximum density.

C. Moisture control:

1. Where subgrade or layer of soil material must be moisture-conditioned before compacting, uniformly apply water to surface of subgrade or layer of soil material to prevent free water appearing on surface during or subsequent to compacting operations.
2. Remove and replace or scarify and air dry, soil material that is too wet to permit compacting to the specified density.
3. Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by disking, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture-density relation tests approved by the MoDOT Inspector.

3.8 MAINTENANCE

- A. Protection of newly graded areas:
 1. Protect newly graded areas from traffic and erosion, and keep free from trash and weeds;
 2. Repair and establish grades in settled, eroded and rutted areas to the specified tolerances.
- B. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape and compact to the required density prior to further construction.

END OF SECTION

TRENCHING, BACKFILLING AND COMPACTING

PART 1 GENERAL

1.1 SUMMARY

- A. Trench, backfill, and compact as specified herein and as needed for installation of underground utilities associated with the Work.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1.2 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirement and the methods needed for proper performance of the work of this Section.
- B. Use equipment adequate in size, capacity and numbers to accomplish the work in a timely manner.
- C. In addition to complying with requirements of governmental agencies having jurisdiction, comply with the directions of the construction soil engineer.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Comply with pertinent provisions of Section 01620.

PART 2 PRODUCTS

2.1 SOIL MATERIALS

- A. Fill and backfill materials:
 - 1. Provide soil materials free from organic matter and deleterious substances, containing no rocks or lumps over 6" in greatest dimension, and with not more than 15% of the rocks or lumps larger than 2-3/8" in their greatest dimension.
 - 2. Fill material is subject to the approval of the owner/ Architect/Engineer/Designer and is that material removed from excavations or imported from off-site borrow areas, predominantly granular, non-expansive soil free from roots and other deleterious matter.
 - 3. Do not permit rocks having a dimension greater than 1" in the upper 12" of fill.
 - 4. Cohesionless material used for backfill: Provide sand free from organic material and other foreign matter and as approved by the Owner/ Architect/Engineer/Designer

2.2 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect/Engineer/Designer.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

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

unsatisfactory conditions are corrected.

3.2 FINISH ELEVATIONS AND LINES

- A. Comply with pertinent provision of Section 01050.

3.3 PROCEDURES

A. Utilities:

1. Unless shown to be removed, protect active utility lines shown on the drawings or otherwise made known to the Contractor prior to trenching. If damaged, repair or replace at no additional cost to the Owner.
2. If active utility lines are encountered, and are not shown on the Drawings or otherwise made known to the Contractor, promptly take necessary steps to assure that service is not interrupted.
3. If service is interrupted as a result of work under this Section, immediately restore service by repairing the damaged utility at no additional cost to the Owner.
4. If existing utilities are found to interfere with the permanent facilities being constructed under this Section, immediately notify the Architect/Engineer/Designer and secure his instructions.
5. Do not proceed with permanent relocation of utilities until written instructions are received from the Architect/Engineer/Designer.

B. Protection of persons and property:

1. Barricade open holes and depressions occurring as part of the Work, and post warning lights on property adjacent to or with public access.
2. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
3. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, washout and other hazards created by operations under this Section.

C. Dewatering:

1. Remove all water, including rainwater, encountered during trench and sub-structure work to an approved location by pumps, drains and other approved methods.
2. Keep trenches and site construction area free from water.

- D. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors and to other work being performed on or near the site.

- E. Maintain access to adjacent areas at all times.

3.4 TRENCHING

- A. Comply with pertinent provisions of Section 02220 and the provisions of this Section.

B. Provide sheeting and shoring necessary for protection of the Work and for the safety of personnel.

1. Prior to backfilling, remove all sheeting.
2. Do not permit sheeting to remain in the trenches except when, in the opinion of the Architect/Engineer/Designer, field conditions or the type of sheeting or methods of construction such as use of concrete bedding are such as to make removal of sheeting impracticable. In such cases, the Architect/Engineer/Designer may permit portions of sheeting to be cut off and remain in the trench.

C. Open cut:

1. Excavate for utilities by open cut.
2. If conditions at the site prevent such open cut and if approved by the

- Architect/Engineer/Designer, trenching may be used.
3. Short sections of a trench may be tunneled if, in the opinion of the Architect/Engineer/Designer, the conductor can be installed safely and backfill can be compacted properly into such tunnel.
 4. Where it becomes necessary to excavate beyond the limits of normal excavations lines in order to remove boulders or other interfering objects, backfill the voids remaining after removal of the objects as directed by the construction soil engineer.
 5. When the void is below the subgrade for the utility bedding, use suitable earth materials and compact to the relative density directed by the construction soil engineer, but in no case to a relative density less than 90%.
 6. When the void is in the side of the utility trench or open cut, use suitable earth or sand compacted or consolidated as approved by the construction soil engineer but in no case to a relative density less than 80%.
 7. Remove boulders and other interfering objects and backfill voids left by such removals, at no additional cost to the Owner.
 8. Excavating for appurtenances:
 - a. Excavate for manholes and similar structures to a distance sufficient to leave at least 12" clear between outer surfaces and the embankment or shoring that may be used to hold and protect the banks.
 - b. Overdepth excavation beyond such appurtenances that has not been directed will be considered unauthorized. Fill with sand, gravel or lean concrete as directed by the construction soil engineer and at no additional cost to the Owner.
- D. Trench to the minimum width necessary for proper installation of the utility, with sides as nearly vertical as possible. Accurately grade the bottom to provide uniform bearing for the utility.
- E. Depressions:
1. Dig bell holes and depressions for joints after the trench has been graded. Provide uniform bearing for the pipe on prepared bottom of the trench.
 2. Except where rock is encountered, do not excavate below the depth indicated or specified.
 3. Where rock is encountered, excavate rock to a minimum overdepth of 4" below the trench depth indicated or specified.
- F. Where utility runs traverse public property or are subject to governmental or utility company jurisdiction, provide depth, bedding, cover and other requirements as set forth by legally constituted authority having jurisdiction but in no case less than the depth shown in the Contract Documents.
- G. Where trenching occurs in existing lawns, remove turf in sections and keep damp. Replace turf upon completion of the backfilling.
- H. Cover:
1. Provide minimum trench depth indicated below to maintain a minimum cover over the top of the installed item below the finish grade or subgrade.
 - a. Areas subject to vehicular traffic:
 - (1) Sanitary sewers:
 - (2) Storm drains:
 - b. Areas not subject to vehicular traffic:
 - (1) Sanitary sewers: 30";
 - (2) Storm drains: 18".
 - c. All areas:
 - (1) Water lines: 30";
 - (2) Natural gas lines: 24";
 - (3) Electrical cables: 42";
 - (4) Electrical ducts: 36".
 - d. Concrete encased:
 - (1) Pipe sleeves for water and gas lines: 24";

(2)	Sanitary sewers and storm drains:	12";
(3)	Electrical ducts:	24".

2. Where utilities are under a concrete structure slab or pavement, the minimum depth need only be sufficient to completely encase the conduit or pipe sleeve and electrical long-radius rigid metal conduit rise, provided it will not interfere with the structural integrity of the slab or pavement.
3. Where the minimum cover is not provided encase the pipes in concrete as indicated. Provide concrete with a minimum 28th day compressive strength of 2500 psi.

3.5 BEDDING

- A. Provide bedding as indicated on the Drawings.

3.6 BACKFILLING

A. General:

1. Do not completely backfill trenches until required pressure and leakage tests have been performed, and until the utilities systems as installed conform to the requirements specified in the pertinent Sections of these Specifications.
2. Except as otherwise specified or directed for special conditions, backfill trenches to the ground surface with selected material approved by the construction soil engineer.
3. Reopen trenches that have been improperly backfilled, to a depth as required for proper compaction. Refill and compact as specified or otherwise correct to the approval of the construction soil engineer.
4. Do not allow or cause any of the Work performed or installed to be covered up or enclosed by work of this Section prior to required inspections, tests and approvals.
5. Should any of the Work be so enclosed or covered up before it has been approved, uncover all such Work and, after approvals have been made, refill and compact as specified, all at no additional cost to the Owner.

B. Lower portion of trench:

1. Deposit approved backfill and bedding material in layers of 6" maximum thickness, and compact with suitable tampers to the density of the adjacent soil, or grade as specified herein, until there is a cover of not less than 24" over sewers and 12" over other utility lines.
2. Take special care in backfilling and bedding operations to not damage pipe and pipe coatings.

C. Remainder of trench:

1. Except for special materials for pavements, backfill the remainder of the trench with material free from stones larger than 6" or 1/2 the layered thickness, whichever is smaller, in any dimension.
2. Deposit backfill material in layers not exceeding the thickness specified and compact each layer to the minimum density directed by the construction soil engineer.

D. Adjacent to buildings: Mechanically compact backfill within ten feet of buildings.

E. Consolidation of backfill by jetting with water may be permitted, when specifically approved by the construction soil engineer, in areas other than building and pavement areas.

3.7 TEST FOR DISPLACEMENT OF SEWERS AND STORMDRAINS

- A. Check sewers and storm drains to determine whether displacement has occurred after the trench has been backfilled to above the pipe and has been compacted as specified.

- B. Flash a light between manholes or, if the manholes have not yet been constructed, between the locations of the manholes, by means of a flashlight or by reflecting sunlight with a mirror.
- C. If the illuminated interior of the pipeline shows poor alignment, displaced pipes, or any other defects, correct the defects to specified conditions and at no additional cost to the Owner.

3.8 PIPE JACKING

- A. The Contractor may, at his option, install steel pipe casings, tongue-and-groove reinforced concrete pipes, and steel pipes under existing roads or pavements by jacking into place using procedures approved by the governmental agencies having jurisdiction approved by the construction soil engineer.

3.9 TUNNELING OPERATIONS

- A. The Contractor may, at his option, tunnel pipes into position using procedures approved by the construction soil engineer and the governmental agencies having jurisdiction.

3.10 FIELD QUALITY CONTROL

- A. The construction soil engineer will inspect open cuts and trenches before installation of utilities, and will make the following tests:
 1. Assure that trenches are not backfilled until all tests have been completed.
 2. Check backfilling for proper layer thickness and compaction.
 3. Verify that test results conform to the specified requirements, and that sufficient tests are performed.
 4. Assure that defective work is removed and properly replaced.

END OF SECTION

SANITARY SEWERAGE SYSTEM

PART 1 GENERAL

1.1 SUMMARY

- A. Provide sanitary sewerage system as shown on the Drawings, specified herein and needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1.2 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.
- B. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
 - 3. Manufacturer's recommended installation procedures which, when approved by the Architect/Engineer/Designer, will become the basis for accepting or rejecting actual installation procedures used on the Work.

1.3 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01620.

PART 2 PRODUCTS

2.1 PIPE AND FITTINGS

- A. Cast iron soil pipe and fittings (CIP):
 - 1. Comply with ASTM A74, class SV.
 - 2. Use rubber gaskets complying with ASTM C564 for compression joints.
- B. Clay pipe and fittings (VCP):
 - 1. Use extra strength, minimum of SDR 35.
 - 2. Comply with ASTM D3034.
- C. Polyvinyl chloride pipe and fitting (PVC)
 - 1. Use extra strength, minimum of SDR 35.
 - 2. Comply with ASTM D3034.
- D. Acrylonitrile butadine styrene pipe and fittings (ABS):
 - 1. Comply with ASTM D2680.

2.2 MANHOLES

- A. Precast:
 - 1. Provide reinforced precast concrete manhole sections complying with ASTM C478, except use Portland cement as specified below.
 - 2. Provide joints of mortar, with approved mastic or rubber gasket or an approved combination of those types.
 - 3. Provide precast units of concrete rings and eccentric cone section with ladder rungs cast into the units.
 - 4. Approved manufacturer:
 - a. Ameron Pipe Products Group.
- B. Portland cement:
 - 1. For concrete in manholes, comply with ASTM C150, type II.
 - 2. For concrete in cradle and encasement: Type optional with the Contractor.
- C. Concrete:
 - 1. Provide 3000 psi concrete in accordance with pertinent provisions of Section 03300 of these Specifications.
- D. Mortar:
 - 1. Comply with ASTM C270, type M.

2.3 FRAMES AND COVERS

- A. Use cast iron frames and covers, with the wording "SEWER" cast into the covers in letters 2" high and plainly visible, as manufactured by Alhambra Foundry.

2.4 CLEANOUTS

- A. Provide cleanouts as required and where shown on the Drawings.
 - 1. Provide traffic weight covers and frames where clean-outs are within pavement, with the letters "SSCO" cast into the cover.
 - 2. Acceptable products:
 - a. Alhambra Foundry, Model A_2100, 10" round cover, unless otherwise shown on the Drawings.
- B. Where cleanout is within a graded area, construct as shown on the Drawings.

2.5 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect/Engineer/Designer.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

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

3.2 FIELD MEASUREMENTS

- A. Make necessary measurements in the field to assure precise fit of items in accordance with the approved design.

3.3 INSTALLATION

- A. Trench, backfill, and compact for the work of this Section in strict accordance with pertinent provisions of Section 02221 of these Specifications.
- B. Location:
 - 1. Where the sewer location is not located clearly by dimensions on the Drawings, locate the sewer:
 - a. Where the bottom of the water pipe will be at least 12" above the top of the sewer pipe, the horizontal spacing may be a minimum of six feet.
 - b. Where the gravity flow sewers cross above water lines, fully encase the sewer pipe for a distance of ten feet on each side of the crossing; or
 - c. Use acceptable pressure pipe with no joint closer horizontally than three feet from the crossing.
 - d. Where concrete encasement is used, provide not less than 4" thickness including that on pipe joints.
- C. Pipe laying:
 - 1. Protect pipe during handling against shocks and free fall. Remove extraneous material from the pipe interior.
 - 2. Lay pipe by proceeding upgrade with the spigot ends of bell-and-spigot pipe pointing in direction of flow.
 - 3. Lay each pipe accurately to the indicated line and grade, aligning so the sewer has a uniform invert.
 - 4. Continually clear interior of the pipe free from foreign material.
 - 5. Before making pipe joints, clean and dry all surfaces of the pipe to be joined.
 - 6. Use lubricants, primers, and adhesives recommended for the purpose by the pipe manufacturer.
 - 7. Place, fit, join, and adjust the joints to obtain the degree of water tightness required.

3.4 WYE BRANCHES

- A. Provide wye branches where sewer connections are indicated or required.
 - 1. Where joining an existing line, join by placing a saddle over the line, and make connection in a manner that will not obstruct or interfere with the existing flow.
 - 2. When conditions are such that connection pipe cannot be supported adequately on undisturbed earth or compacted fill, encase the pipe in a concrete backfill or support on a concrete cradle.
- B. Provide concrete required because of conditions resulting from faulty construction methods or negligence, at no additional cost to the Owner.

3.5 MANHOLES

- A. General:
 - 1. Shape the invert channels to be smooth and semicircular, conforming to the inside of the adjacent sewer section.
 - 2. Make changes in direction of flow with a smooth curve of as large a radius as the size of the manhole will permit.
 - 3. Make changes in size and grade of channels smoothly and evenly.
 - 4. Form the invert channels directly in the concrete of the manhole base, with mortar, or by laying full section sewer pipe through the manhole and breaking out the top half after surrounding concrete has hardened.
 - 5. Smooth the floor of the manhole outside the channels, and slope toward the channels at not less than 1" per foot nor more than 2" per foot.
 - 6. Prevent free drop inside the manholes exceeding 18" measured from the invert of the inlet pipe to the top of the floor of the manhole outside the channels.

7. Construct drop manholes whenever the free drop otherwise would be greater than 18".
- B. Manhole rungs:
 1. Provide each manhole with individual wall-mounted rungs fabricated of aluminum, plastic-covered steel or galvanized steel.
 2. Comply with the requirements of governmental agencies having jurisdiction.
- C. Jointing and plastering:
 1. Completely fill mortar joints, and leave smooth and free from surplus mortar on the inside of the manhole.
- D. Frames and covers: Unless otherwise shown on the Drawings, set frames and covers:
 1. In paved areas: So that the top of the cover will be flush with the finished pavement; or
 2. In unpaved areas: 2" higher than finished grade.

3.6 MANHOLE OVER EXISTING PIPE

- A. Construct new manhole as specified, breaking upper half of existing pipe after base of manhole is completed so as not to obstruct flow of the existing pipe.

3.7 BUILDING CONNECTIONS

- A. Terminate building connections where shown on the Drawings.
- B. Provide temporary closures at terminals where the building pipe is not installed.
 1. Place marker post at grade end of plugged line.
 2. Where building piping has been installed, make connection to the building piping system.

3.8 TESTING AND INSPECTING

- A. Do not allow or cause any of the work of this Section to be covered up or enclosed until after it has been inspected and tested and has been approved by the Architect/Engineer/Designer.
- B. Leakage tests:
 1. Test lines for leakage by exhalation tests.
 - a. Prior to testing for leakage, backfill the trench to at least the lower half of the pipe.
 - b. If required, place sufficient additional backfill to prevent pipe movement during testing, leaving the joints uncovered to permit inspection.
 2. Water exhalation tests:
 - a. Test each section of sewer line between successive manholes by closing the lower end of the sewer to be tested and the inlet sewer of the upper manhole, using stoppers.
 - b. Fill the manhole and pipe with water to a point four feet above the invert of the sewer at the center of the upper manhole; or, if groundwater is present, four feet above the average adjacent groundwater level.
 - c. Allowable leakage will be computed by the formula:
 - (1) For mortared joints: $E = 0.0001 LD H$;
 - (2) For all other joints: $E = 0.0002 LD H$;
 - (3) "L" is the length of sewer and house connections tested, in feet;
 - (4) "E" is the allowable leakage in gallons per minute of sewer test;
 - (5) "D" is the internal pipe diameter in inches;
 - (6) "H" is the difference in elevation between the water surface in the upper manhole and the invert of the pipe at the lower manhole; or, if groundwater is present above the invert of the pipe in the lower manhole, the difference in elevation between water surface in the upper manhole and the groundwater at the lower manhole.
 3. Water infiltration test:
 - a. If, in the opinion of the Architect/Engineer/Designer, excessive groundwater is

- encountered in the construction of a section of the sewer, the exhalation test shall not be used.
- b. Close the end of the sewer at the upper structure sufficiently to prevent the entrance of water.
 - c. Discontinue pumping of groundwater for at least three days, then test for infiltration.
 - d. Infiltration into each individual reach of sewer between adjoining manholes shall not exceed that allowed in the formula given for the exhalation test, except that "H" in the formula shall be the difference between the groundwater surface and the invert of the sewer at the downstream manhole.
4. Provide and use measuring devices approved by the Architect/Engineer/Designer.
 5. Provide water, materials, and labor for making required tests.
 6. Make tests in the presence of the Architect/Engineer/Designer, giving the Architect/Engineer/Designer at least three days advance notice of being ready for test observation.
- C. Submit test data to the Architect/Engineer/Designer for review and approval.

END OF SECTION

03100

CONCRETE FORMWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Formwork for cast-in place concrete, with shoring, bracing and anchorage.
- B. Openings for other work.
- C. Form accessories.
- D. Form stripping.

1.2 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Section 03200 - Concrete Reinforcement
- B. Section 03300 - Cast-in-Place Concrete: Supply of concrete accessories for placement by this section.
- C. Section 05500 - Metal Fabrications: Supply of metal fabrications for placement by this section.

1.3 RELATED SECTIONS

- A. Section 03200 - Concrete Reinforcement.
- B. Section 03300 - Cast-in-Place Concrete.

1.4 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 318 - Building Code Requirements for Reinforced Concrete.
- C. ACI 347 - Recommended Practice For Concrete Formwork.
- D. PS 1 - Construction and Industrial Plywood.

1.5 DESIGN REQUIREMENTS

- A. Design, engineer and construct formwork, shoring and bracing to conform to design and code requirements; concrete to conform to required shape, line and dimension.

1.6 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on void form materials and installation requirements.

1.7 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 347.

1.8 REGULATORY REQUIREMENTS

- A. Conform to applicable code for design, fabrication, erection and removal of formwork.

1.9 FIELD SAMPLES

- A. Provide under provisions of Section 01400. Coordinate with requirements stated in Section 03100 and 03300.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.
- B. Deliver void forms and installation instructions in manufacturer's packaging.
- C. Store off ground in ventilated and protected manner to prevent deterioration from moisture.

1.11 COORDINATION

- A. Coordinate work under provisions of Section 01039.
- B. Coordinate this Section with other Sections of work that require attachment of components to formwork.
- C. If formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement before proceeding, request instructions from Architect/Engineer/Designer.

PART 2 PRODUCTS

2.1 WOOD FORM MATERIALS

- A. Plywood: Douglas Fir species; grade B/B plyform class 1 or 2; sound undamaged sheets with clean, true edges.
- B. Lumber: Douglas Fir species; standard grade; with grade stamp clearly visible.

2.2 PREFABRICATED FORMS

- A. Preformed Steel Forms: Minimum 16 gage matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
- B. Pan Type: Steel of size and profile required.
- C. Tubular Column Type: Round, spirally wound laminated fiber material, surface treated with release agent, non-reusable, of sizes required.
- D. Void Forms: Moisture resistant treated paper faces, biodegradable, structurally sufficient to support weight of wet concrete mix until initial set; 2 inches thick.

2.3 FORMWORK ACCESSORIES

- A. Form Ties: Snap-off type, galvanized metal, fixed length, cone type, with waterproofing washer, free of defects that could leave holes larger than 1 inch in concrete surface.
- B. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.
- C. Dovetail Anchor Slot: Galvanized steel, 22 gauge thick, foam filled, release tape sealed slots, anchors for securing to concrete formwork.
- D. Flashing Reglets: Galvanized steel, 22 gage thick, longest possible lengths, with alignment splines for joints, foam filled, release tape sealed slots, anchors for securing to concrete formwork.
- E. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.
- F. Waterstops: Rubber, minimum 1,750 p.s.i tensile strength, minimum 50 degrees F to plus 175 degrees F working temperature range, wide, maximum possible lengths, ribbed profile, preformed corner sections, heat welded jointing.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.2 EARTH FORMS

- A. Earth forms are not permitted except for spread and column footings, which are to be square and free of debris.

3.3 ERECTION - FORMWORK

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with ACI 301.
- B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to over stressing by construction loads.
- C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- D. Align joints and make watertight. Keep form joints to a minimum.
- E. Obtain approval before framing openings in structural members that are not indicated on Drawings.
- F. Install void forms in accordance with manufacturer's recommendations. Protect forms from moisture or crushing.

3.4 APPLICATION - FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.
- B. Apply prior to placement of reinforcing steel, anchoring devices and embedded items.
- C. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

3.5 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for items to be embedded in passing through concrete work.
- B. Locate and set in place items which will be cast directly into concrete.
- C. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts and components of other Work.
- D. Install accessories in accordance with manufacturer's instructions, straight, level and plumb. Ensure items are not disturbed during concrete placement.
- E. Install water-stops continuous without displacing reinforcement. Heat seal joints watertight.
- F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.
- G. Close temporary openings with tight fitting panels, flush with inside face of forms and neatly fitted so joints will not be apparent in exposed concrete surfaces.

3.6 FORM CLEANING

- A. Clean forms as erection proceeds, to remove foreign matter within forms.
- B. Clean formed cavities of debris prior to placing concrete.
- C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.
- D. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.7 FORMWORK TOLERANCES

- A. Construct formwork to maintain tolerances required by ACI 301.

3.8 FIELD QUALITY CONTROL

- A. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design and that supports, fastenings, wedges, ties and items are secure.
- B. Do not reuse wood formwork more than 2 times for concrete surfaces to be exposed to view. Do not patch formwork.

3.9 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Loosen forms carefully. Do not wedge pry bars, hammers or tools against finish concrete surfaces scheduled for exposure to view.
- C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.

END OF SECTION

03200

CONCRETE REINFORCEMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Reinforcing steel bars, wire fabric and accessories for cast-in-place concrete.

1.2 RELATED SECTIONS

- A. Section 03100 - Concrete Formwork.
- B. Section 03300 - Cast-in-Place Concrete.

1.3 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 318 - Building Code Requirements For Reinforced Concrete.
- C. ACI SP-66 - American Concrete Institute - Detailing Manual.
- D. ACI 315-99 – Details and Detailing of Concrete Reinforcement
- E. ANSI/ASTM A82 - Cold Drawn Steel Wire for Concrete Reinforcement.
- F. ANSI/ASTM A184 - Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
- G. ANSI/ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- H. ANSI/AWS D1.4 - Structural Welding Code for Reinforcing Steel.
- I. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- J. AWS D12.1 - Welding Reinforcement Steel, Metal Inserts and Connections in Reinforced Concrete Construction.
- K. CRSI - Concrete Reinforcing Steel Institute - Manual of Standard Practice.
- L. CRSI - Placing Reinforcing Bars.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with CRSI - Manual of Standard Practice & ACI 318.

1.5 COORDINATION

- A. Coordinate work under provisions of Section 01039.
- B. Coordinate with placement of formwork, formed openings and other Work.

PART 2 PRODUCTS

2.1 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615, yield grade; deformed billet steel bars, unfinished.

- B. Reinforcing Steel Plain Bar and Rod Mats: ASTM A704, ASTM A615, Grade 60; steel bars or rods, unfinished.
- C. Stirrup Steel: ANSI/ASTM A82, unfinished.
- D. Welded Steel Wire Fabric: ASTM A815; in flat sheets.

2.2 ACCESSORY MATERIALS

- A. Tie Wire: Minimum gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions including load bearing pad on bottom to prevent vapor barrier puncture.
- C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: Plastic coated steel; size and shape as required.

2.3 FABRICATION

- A. Fabricate concrete reinforcing in accordance with CRSI Manual of Practice ACI SP-66.

PART 3 EXECUTION

3.1 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.
- C. Accommodate placement of formed openings.
- D. Conform to applicable code for concrete cover over reinforcement.

END OF SECTION

03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cast-In-Place Concrete floors, shear walls, foundation walls and supported slabs.
- B. Floors and slabs on grade.
- C. Control, expansion and contraction joint devices associated with concrete work, including joint sealants.
- D. Equipment pads, light pole base, flagpole base, thrust blocks and manholes.

1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 03100 - Concrete Formwork: Placement of joint device anchors in formwork.

1.3 RELATED SECTIONS

- A. Section 03100 - Concrete Formwork: Formwork and accessories.
- B. Section 03200 - Concrete Reinforcement.
- C. Section 03346 - Concrete Floor Finishing.
- D. Section 03370 - Concrete Curing.
- E. Section 07900 - Joint Sealers.

1.4 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 302 - Guide for Concrete Floor and Slab Construction.
- C. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- D. ACI 305R - Hot Weather Concreting.
- E. ACI 306R - Cold Weather Concreting.
- F. ACI 318 - Building Code Requirements for Reinforced Concrete.
- G. ANSI/ASTM D994 - Preformed Expansion Joint Filler for Concrete (Bituminous Type).
- H. ANSI/ASTM D1190 - Concrete Joint Sealer, Hot-Poured Elastic Type.
- I. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
- J. ANSI/ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- K. ASTM C33 - Concrete Aggregates.
- L. ASTM C94 - Ready-Mixed Concrete.
- M. ASTM C150 - Portland cement.
- N. ASTM C260 - Air Entraining Admixtures for Concrete.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on joint devices, attachment accessories and admixtures.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301.

1.7 COORDINATION

- A. Coordinate work under provisions of Section 01039.
- B. Coordinate the placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I - Normal, Type II - Moderate, Type V - Sulfate Resistant.
- B. Fine and Coarse Aggregates: ASTM C33.
- C. Water: Clean and not detrimental to concrete.

2.2 ADMIXTURES

- A. Air Entrainment: ASTM C260.

2.3 ACCESSORIES

- A. Bonding Agent: Polymer resin emulsion.
- B. Vapor Barrier: thick clear polyethylene film.
- C. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days.

2.4 JOINT DEVICES AND FILLER MATERIALS

- A. Joint Filler Type A: ASTM D1751; ASTM D994; Asphalt impregnated fiberboard or felt, 1/2" thick; tongue and groove profile.
- B. Joint Filler Type B: ASTM D1752; Closed cell polyvinyl chloride foam, resiliency recovery of 95 percent if not compressed more than 50 percent of original thickness.
- C. Joint Filler Type C: ASTM D1752; Pre-molded sponge rubber fully compressible with recovery rate of minimum 95 percent.
- D. Expansion Joint Devices: ASTM B221 alloy, extruded aluminum; resilient filler strip with a Shore A hardness of 35 to permit plus or minus 25 percent joint movement with full recovery; extruded aluminum cover plate, of longest manufactured length at each location, flush Mounted, color as selected.
- E. Sealant: ASTM D1190; polymer based asphalt or coal tar and rubber compound.

2.5 CONCRETE MIX

- A. All concrete shall be, Type 1 cement with a compressive strength of 4,000 p.s.i. at 28 days.
- B. Mix concrete in accordance with ACI 304. Deliver concrete in accordance with ASTM C94.
- C. Use accelerating admixtures in cold weather only when approved by Architect/Engineer/Designer. Use of admixtures will not relax cold weather placement requirements.
- D. Use calcium chloride only when approved by Architect/Engineer/Designer.
- E. Use set retarding admixtures during hot weather only when approved by Architect/Engineer/Designer.
- F. Add air entraining agent to normal weight concrete mix for work exposed to exterior.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under provisions of Section 01039.
- B. Verify requirements for concrete cover over reinforcement.

- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely and will not cause hardship in placing concrete.

3.2 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
- B. In locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

3.3 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304 & ACI 301.
- B. Notify Architect/Engineer/Designer minimum 24 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.
- D. Separate slabs on grade from vertical surfaces with ½” thick joint filler.
- E. Place joint filler in floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- F. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface. Conform to Section 07900 for finish joint sealer requirements.
- G. Install joint devices in accordance with manufacturer's instructions.
- H. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.
- I. Install joint device anchors. Maintain correct position to allow joint cover to be flush with floor and wall finish.
- J. Install joint covers in longest practical length, when adjacent construction activity is complete.
- K. Apply sealants in joint devices in accordance with Section 07900.
- L. Place concrete continuously between predetermined expansion, control and construction joints.
- M. Do not interrupt successive placement; do not permit cold joints to occur.
- N. Place floor slabs in pattern indicated on drawings.
- O. Saw cut joints within 24 hours after placing. Use 3/16” thick blade, cut into 1/4 depth of slab thickness. If in-slab-heating is used cut joints 1/2 inch deep
- P. Screed floors and slabs on grade level, maintaining surface flatness of maximum.

3.4 SEPARATE FLOOR TOPPINGS

- A. Prior to placing floor topping, roughen substrate concrete surface and remove deleterious material. Broom and vacuum clean.
- B. Place required dividers, edge strips, reinforcing, and other items to be cast in.
- C. Apply bonding agent to substrate in accordance with manufacturer's instructions.

3.5 CONCRETE FINISHING

- A. Provide formed concrete surfaces to be left exposed with smooth rubbed finish.
- B. Finish concrete floor surfaces to requirements of Section 03346.

3.6 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Cure concrete floor surfaces to requirements of Section 03370.
- D. Cure floor surfaces in accordance with ACI 308.

3.7 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed in accordance with ACI 301 and under provisions of Section 01400.
- B. Provide free access to Work and cooperate with appointed firm.
- C. Submit proposed mix design to Architect/Engineer/Designer for review prior to commencement of Work.
- D. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
- E. Three concrete test cylinders will be taken for every 75 or less cu yards of concrete placed.
- F. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
- G. One slump test will be taken for each set of test cylinders taken.

3.8 PATCHING

- A. Allow Architect/Engineer/Designer to inspect concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect/Engineer/Designer upon discovery.
- C. Patch imperfections as directed.

3.9 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Architect/Engineer/Designer.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer/Designer for each individual area.

END OF SECTION

CONCRETE FLOOR FINISHING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Finishing slabs-on-grade.
- B. Surface treatment with concrete hardener, non-skid finish and sealer.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete: Prepared concrete floors ready to receive finish; control and formed expansion and contraction joints and joint devices.
- B. Section 03370 - Concrete Curing.
- C. Section 07900 - Joint Sealers.

1.3 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 302 - Guide for Concrete Floor and Slab Construction.
- C. ASTM E1155 - Determining Floor Flatness and Levelness Using the F-Number System.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on concrete hardener, sealer and slip resistant treatment, compatibilities and limitations.

1.5 MAINTENANCE DATA

- A. Submit under provisions of Section 01700.
- B. Maintenance Data: Provide data on maintenance renewal of applied coatings.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301 and ACI 302.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01039.
- B. Deliver materials in manufacturer's packaging including application instructions.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Temporary Lighting: Minimum 200 W light source, placed above the floor surface, for each 100 square feet of floor being finished.
- B. Do not finish floors until the interior heating system is operational.
- C. Ventilation: Sufficient to prevent injurious gases from temporary heat or other sources affecting concrete.

1.9 COORDINATION

- A. Coordinate work under provisions of Section 01039.

- B. Coordinate the work with concrete floor placement and concrete floor curing.
- PART 2 PRODUCTS**

2.1 CURING/SEALING COMPOUNDS

- A. Curing/sealing compound equal to Ashford Formula as distributed by:
Curecrete Chemical Company, Inc.
1201 W. Spring Creek Place
Springville, UT 84663
(801) 489-5663

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions under provisions of Section 01039.
- B. Verify that floor surfaces are acceptable to receive the work of this section.

3.2 FLOOR FINISHING

- A. Finish concrete floor surfaces in accordance with ACI 301 and ACI 302.
- B. Steel trowel surfaces that will receive carpeting, resilient flooring and seamless flooring.
- C. Steel trowel surfaces that areas scheduled to be exposed.
- D. In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains at nominal.

3.3 FLOOR SURFACE TREATMENT

- A. Apply sealer in accordance with manufacturer's instructions on floor surfaces.

3.4 TOLERANCES

- A. Maximum Variation of Surface Flatness For Exposed Concrete Floors: 1/4 inch.
- B. Maximum Variation of Surface Flatness Under Seamless Resilient Flooring: 1/8 in.
- C. Maximum Variation of Surface Flatness Under Carpeting: 1/8 in.

END OF SECTION

03370

CONCRETE CURING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Initial and final curing of horizontal and vertical concrete surfaces.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete.
- B. Section 03346 - Concrete Floor Finishing.

1.3 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 302 - Recommended Practice for Concrete Floor and Slab Construction.
- C. ACI 308 - Standard Practice for Curing Concrete.
- D. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- E. ASTM D2103 - Polyethylene Film and Sheeting.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ACI 301 and ACI 302.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products under provisions of Section 01600.
- B. Deliver curing materials in manufacturer's packaging including application instructions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Curing/sealing compound equal to Ashford Formula as distributed by:
Curecrete Chemical Company, Inc.
1201 W. Spring Creek Place
Springville, UT 84663
(801)489-5663

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify substrate conditions under provisions of Section 01039.
- B. Verify that substrate surfaces are ready to be cured.

3.2 EXECUTION - HORIZONTAL SURFACES

- A. Cure floor surfaces in accordance with ACI 308.

3.3 EXECUTION - VERTICAL SURFACES

- A. Cure surfaces in accordance with ACI 308.

3.4 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. Do not permit traffic over unprotected floor surface.

END OF SECTION

03411

STRUCTURAL PRECAST CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Columns and bearing saddles.
- B. Beams, spandrels, girders, purlins.
- C. Floor double tees, channel slabs, inverted tee beam.
- D. Grout packing.
- E. Connection and supporting devices.
- F. Lintels and bond beams.

1.2 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Section 03100 - Concrete Formwork: Anchorage devices for bond beams and lintels.

1.3 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Section 03200 - Concrete Reinforcement: Placement of anchorage and connection devices.
- B. Section 04300 - Unit Masonry System: Placement of lintels and bond beams.

1.4 RELATED SECTIONS

- A. Section 03100 - Concrete Formwork: Foundation concrete work.
- B. Section 03300 - Cast-in-Place Concrete: Concrete topping and reinforcement.
- C. Section 03505 - Self-Leveling Underlayment.
- D. Section 07900 - Joint Sealers: Calking of butt joints of precast units.

1.5 REFERENCES

- A. ACI 301 - Structural Concrete for Buildings.
- B. ACI 318 - Building Code Requirements for Reinforced Concrete.
- C. ANSI/AWS D1.1 - Structural Welding Code.
- D. ANSI/AWS D1.4 - Structural Welding Code - Reinforcing Steel.
- E. ANSI/ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- F. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- G. ASTM C150 - Portland cement.
- H. PCI MNL-120 - Design Handbook - Precast and Prestressed Concrete.
- I. PCI MNL-123 - Manual on Design of Connections for Precast Prestressed Concrete.
- J. UL - Underwriters Laboratories.

1.6 DESIGN REQUIREMENTS

- A. Size components to withstand design loads in a restrained condition as follows:
 - 1. Horizontal Assembly: 150 lb per sq ft live and dead load.
 - 2. Vertical Assembly: 40 lb per sq ft.
- B. Maximum Allowable Deflection: 1/240 span.
- C. Design members exposed to the weather to provide for movement of components without damage, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to seasonal or cyclic day/night temperature ranges.
- D. Design system to accommodate construction tolerances, deflection of other building structural members and clearances of intended openings.
- E. Calculate structural properties of framing members in accordance with ACI 301.

1.7 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate layout, unit locations, fabrication details, reinforcement, connection details, support items, dimensions, openings and relationship to adjacent materials.
- C. Indicate design loads, deflections, cambers, bearing requirements and special conditions.
- D. Product Data: Indicate standard component configurations, design loads, deflections, cambers and bearing requirements.

1.8 QUALITY ASSURANCE

- A. Perform Work in accordance with the requirements of PCI MNL-116, PCI MNL-123, PCI MNL-120.

1.9 QUALIFICATIONS

- A. Fabricator: Company specializing in manufacturing the work of this section with minimum three years experience.
- B. Erector: Company with experience in erecting the work of this section for at least three years and approved by Fabricator.
- C. Design precast concrete members under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the state of Missouri.
- D. Welder: Qualified within previous 12 months in accordance with ANSI/AWS D1.1 and ANSI/AWS D1.4.

1.10 REGULATORY REQUIREMENTS

- A. Conform to ACI 318 and applicable code for design load and construction requirements for work of this Section.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products going to site under provisions of Section 01600.
- B. Handle precast members in position consistent with their shape and design. Lift and support only from support points.
- C. Lifting or Handling Devices: Capable of supporting member in positions anticipated during manufacture, storage, transportation and erection.
- D. Protect members to prevent staining, chipping or spalling of concrete.
- E. Mark each member with date of production and final position in structure.

1.12 COORDINATION

- A. Coordinate work under provisions of Section 01039.
- B. Coordinate the work of framing components not pre-tensioned but associated with the work of this section.

1.13 MATERIALS

- A. Cement: White Portland, conforming to ASTM C150 Type I.
- B. Aggregate, Sand, Water and Admixtures: Determined by precast fabricator as appropriate to design requirements and PCI MNL-116.

1.14 REINFORCEMENT

- A. Tensioning Steel Tendons: ANSI/ASTM A416 Grade 250k, of sufficient strength commensurate with member design.

- B. Reinforcing Steel: ASTM A615 Grade 60, deformed steel bars.
- C. Welded Steel Wire Fabric: ASTM A185 Plain Type; in flat sheets, unfinished.

1.15 ACCESSORIES

- A. Connecting and Supporting Devices: ASTM A36 carbon steel Plates, angles, items cast into concrete or items connected to steel framing members; inserts, conforming to PCI MNL-123; hot-dip galvanized in accordance with ASTM A153 unfinished. Do not paint surfaces in contact with concrete or surfaces requiring field welding.
- B. Grout: Non-shrink, minimum yield strength of 7,000 p.s.i at 28 days.
- C. Bearing Pads: High density plastic, thick, smooth both sides; Vulcanized elastomeric compound molded to size Neoprene (Chloroprene); to Shore A Durometer.
- D. Bolts, Nuts and Washers: High strength steel type recommended for structural steel joints.
- E. Prime Paint: Zinc rich alkyd type.

1.16 FABRICATION

- A. Fabrication procedure to conform to PCI MNL-116.
- B. Maintain plant records and quality control program during production of precast members. Make records available upon request.
- C. Ensure reinforcing steel, anchors, inserts, plates, angles and other cast-in items are embedded and located as indicated on shop drawings.
- D. Tension reinforcement tendons as required achieving the design hold criteria.
- E. Provide required openings with a dimension larger than and embed accessories provided by other Sections, at indicated locations.
- F. Exposed Ends at Stressing Tendons: Fill recess with non shrink epoxy grout, trowel flush.

1.17 FINISHES

- A. Ensure exposed-to-view finish surfaces of precast concrete members are uniform in color and appearance.
- B. Cure members under identical conditions to develop required concrete quality, and minimize appearance blemishes such as non-uniformity, staining or surface cracking.
- C. Finish members to PCI MNL-116 Standard Finish "A" grade.
- D. Plant Finish (Finish A): Normal plant finish; surface may contain small surface holes caused by air bubbles, minor chips or spalling at edges or ends, without major discoloration.

PART 2 PRODUCTS

2.7 FABRICATION TOLERANCES

- A. Conform to PCI MNL-116.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that site conditions are ready to receive work and field measurements are as shown on shop drawings.

3.2 PREPARATION

- A. Prepare support equipment for the erection procedure, temporary bracing and induced loads during erection.

3.3 ERECTION

- A. Erect members without damage to structural capacity, shape or finish. Replace or repair damaged members.
- B. Align and maintain uniform horizontal and vertical joints, as erection progresses.
- C. Maintain temporary bracing in place until final support is provided. Protect members from staining.
- D. Provide temporary lateral support to prevent bowing, twisting or warping of members.
- E. Adjust differential camber between precast members to tolerance before final attachment.
- F. Level differential elevation of adjoining horizontal members with grout to maximum slope of 1:12.
- G. Set vertical units dry, without grout, attaining joint dimension with lead or plastic spacers.
- H. Secure units in place. Perform welding in accordance with ANSI/AWS D1.1.

3.4 ERECTION TOLERANCES

- A. Erect members level and plumb within allowable tolerances.
- B. Conform to PCI MNL-116
- C. When members cannot be adjusted to conform to design or tolerance criteria, cease work and advise Architect/Engineer/Designer. Execute modifications as directed.

3.5 PROTECTION

- A. Protect members from damage caused by field welding or erection operations.
- B. Provide non-combustible shields during welding operations.

3.6 CLEANING

- A. Clean weld marks, dirt or blemishes from surface of exposed members.

END OF SECTION

04100

MORTAR AND MASONRY GROUT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Mortar and grout for masonry.

1.2 RELATED SECTIONS

- A. Section 04305 - Brick Masonry System.

1.3 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 530 and ACI 530.1.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Premix Mortar: ASTM C387, using gray cement, normal strength.
- B. Mortar Aggregate: ASTM C144, standard masonry type.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Grout Aggregate: ASTM C404.
- E. Water: Clean and potable.
- F. Bonding Agent: Epoxy type.

2.2 MORTAR MIXES

- A. Mortar for Masonry Below Grade and in Contact with Earth: ASTM C270, Type M.
- B. Mortar for Reinforced Masonry: ASTM C270, Type S.
- C. Mortar for Reinforced Masonry: ASTM C270, Type S.
- D. Mortar for Non-load Bearing Walls and Partitions: ASTM C270, Type S or Type N.

2.3 MORTAR MIXING

- A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C270.
- B. Add admixtures in accordance with manufacturer's instructions.
- C. Do not use antifreeze compounds to lower the freezing point of mortar.

2.4 MORTAR COLOR

- A. Mortar Color: Mineral oxide pigment, color as selected by Architect/Engineer/Designer.

2.5 GROUT MIXES

- A. Grout: Mixed in accordance with ASTM C476; provide consistency required at time of placement to fill completely all spaces indicated to be grouted.
 - 1. Use fine grout in spaces less than 2 inches in least horizontal dimension.
 - 2. Use coarse grout in spaces 2 inches or more in least horizontal dimension.

2.6 GROUT MIXING

- A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C476.
- B. Do not use anti-freeze compounds to lower the freezing point of grout.

2.7 MIX TESTS

- A. Testing of Mortar Mix: In accordance with ASTM C780
- B. Testing of Grout Mix: In accordance with ASTM C1019.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install mortar in accordance with ASTM C780.
- B. Perform all grouting by means of low-lift technique.
 - 1. Maintain minimum dimension of 2 inches and minimum area of 6 square inches in cells to be grouted. Extend vertical reinforcement above pour height as required for splicing.
 - 2. Lay masonry units to maximum pour height, not to exceed 32 inches.
 - 3. Place grout continuously and consolidate immediately; do not interrupt pour for more than one hour.
 - 4. Stop vertical pours 1-1/2 inches below bond beams to interlock with vertical cores.
- C. Work grout into masonry cores and cavities to eliminate voids. Do not displace reinforcement.

END OF SECTION

04300

UNIT MASONRY SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Concrete masonry units.
- B. Reinforcement, anchorage and accessories.
- C. Targeted masonry surfaces.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control.
- B. Section 05500 - Metal Fabrications: Loose steel lintels and fabricated steel items.
- C. Section 07160 - Bituminous: Dampproofing masonry surfaces.
- D. Section 07212 - Rigid Insulation: Insulation for cavity spaces.
- E. Section 07900 - Joint Sealers: Rod and sealant at control and expansion joints.

1.3 REFERENCES

- A. ACI 530 - Building Code Requirements for Masonry Structures.
- B. ACI 530.1 - Specifications For Masonry Structures.
- C. ASTM A82 - Cold-Drawn Steel Wire for Concrete Reinforcement.
- D. ASTM C129 - Non-Load Bearing Concrete Masonry Units.
- E. ASTM C744 - Pre-faced Concrete and Calcium Silicate Masonry Units.
- F. UL - Fire Resistance Directory.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during and 48 hours after completion of masonry work.

1.5 COORDINATION

- A. Coordinate work under provisions of Section 01039.

PART 2 PRODUCTS

2.1 CONCRETE MASONRY UNITS

- A. Hollow Non-Load Bearing Block Units (CMU): ASTM C129, Type I - Moisture Controlled; normal weight.
- B. Decorative Block Units: ASTM C90, Type I - Moisture Controlled; color as selected.
 - 1. Ribbed and split face with three vertical ribs.
- C. Concrete Brick Units: ASTM C55, Grade N, Type I - Moisture Controlled; of same Grade, Type, and Weight as block units.
- D. Size and Shape: Nominal modular size of 8 x 8 x 16 and 4 x 8 x 16 inches. Provide special units for 90-degree corners, bond beams, lintels and bullnosed corners.

2.2 REINFORCEMENT AND ANCHORAGE

- A. Single Wythe Joint Reinforcement: Truss type; steel wire, hot dip galvanized to ASTM A641 Class 3 after fabrication, cold drawn steel wire conforming to ASTM A82, 3/16 inch side rods with 1/16 inch cross ties.

- B. Wall Ties: bent steel shape, 1 x 6 inch size x 18 gauge thick, hot dip galvanized to ASTM A123 finish.

2.3 FLASHINGS

- A. Galvanized Steel: ASTM A525, 24-gauge core steel.

2.4 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, heat fused joints.
- B. Building Paper: No. 15 asphalt saturated felt.
- C. Nailing Strips: Softwood, preservative treated for moisture resistance, dovetail shape, sized to masonry joints.
- D. Weeps: Preformed plastic tubes, hollow.
- E. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.5 SEALERS

- A. Provide sealer to exterior concrete masonry units equal to Sure Klean; Blok-Guard S or Weather Seal Siloxane WB Concentrate as manufactured by: ProSoCo, Inc.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Verify items provided by other sections of work are properly sized and located.
- C. Verify that built-in items are in proper location and ready for roughing into masonry work.

3.2 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied to other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.3 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Beveled.

3.4 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- D. Remove excess mortar as work progresses.
- E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

- F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.5 WEEPS

- A. Install weeps in veneer at 24 inches o.c. horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.

3.6 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Install horizontal joint reinforcement 16 inches O.C.
- B. Place masonry joint reinforcement in first horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place joint reinforcement continuous in first joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Secure wall ties to stud framed back-up and embed into masonry veneer at maximum 16 inches O.C. vertically and 36 inches o.c. horizontally. Place at maximum 3 inches o.c. each way around perimeter of openings, within 12 inches of openings.
- F. Reinforce unit joint corners and intersections with strap anchors 16 inches O.C.

3.7 MASONRY FLASHINGS

- A. Extend flashings horizontally at foundation walls, above ledge or shelf angles and lintels and at bottom of walls.
- B. Turn flashing up minimum 8 inches and seal to sheathing over wood or steel stud back-up.
- C. Lap end joints minimum 6 inches and seal watertight.
- D. Turn flashing; fold and seal at corners, bends and interruptions.

3.8 LINTELS

- A. Install loose steel or precast concrete lintels over openings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
- C. Openings Up To 42 inches Wide: Place two No. 4 M9 reinforcing bars 1 inch from bottom web.
- D. Openings From 42 inches Up To 78 inches Wide: Place two No. 5 M16 reinforcing bars 1 inch from bottom web.
- E. Openings Over 78 inches: Reinforce openings as detailed.
- F. Do not splice reinforcing bars.
- G. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- H. Place and consolidate grout fill without displacing reinforcing.
- I. Allow masonry lintels to attain specified strength before removing temporary supports.
- J. Maintain minimum 6 inch bearing on each side of opening.

3.9 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control and expansion joints.

- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Size control joint in accordance with Section 07900 for sealant performance.
- D. Form expansion joint as detailed.

3.10 TOLERANCES

- A. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- C. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- E. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft.
- F. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.11 CUTTING AND FITTING

- A. Cut and fit for chases, pipes, conduit, sleeves and grounds. Coordinate with other sections of work to provide correct size, shape and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.12 FIELD QUALITY CONTROL

- A. Field inspection will be performed under provisions of Section 01400.
- B. Inspect all masonry work.

3.13 CLEANING

- A. Clean work under provisions of 01700.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Replace defective mortar. Match adjacent work.
- D. Clean soiled surfaces with cleaning solution.
- E. Use non-metallic tools in cleaning operations.

3.14 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 01500.
- B. Without damaging completed work, provide protective boards at exposed external corners, which may be damaged by construction activities.

END OF SECTION

04305

BRICK MASONRY SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Brick units.
- B. Reinforcement, anchorage and accessories.

1.2 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

- A. Section 05120 - Structural Steel: Placement of steel anchors.
- B. Section 05210 - Steel Joists: Placement of steel bearing pads for joists.
- C. Section 05500 - Metal Fabrications: Placement of loose steel lintels and fabricated steel items.
- D. Section 07620 - Flashing and Sheet Metal: Placement of reglets for flashings.
- E. Placement of window anchors.

1.3 MOCKUP

- A. Provide mockup of brick masonry under provisions of Section 01400.
- B. Construct a masonry wall into a panel sized 6 feet long by 4 feet high, which includes mortar and accessories.
- C. Locate where directed.
- D. Mockup may not remain as part of the Work.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 48 degrees F prior to, during and 48 hours after completion of masonry work.

1.5 COORDINATION

- A. Coordinate work under provisions of Section 01039.

1.6 EXTRA MATERIALS

- A. Submit under provisions of Section 01700.
- B. Provide 50 of each size, color, and type of face brick units.

1.7 BRICK UNITS

- A. Face Brick: ASTM C216, Type FBS, Grade MW; color as selected.
- B. Size and Shape: Nominal modular size of 4 x 8 x 2 5/8 inches. Provide special units for 90-degree corners, lintels and bullnosed corners.
- C. The brick allowance to be \$350.00 per one thousand brick. The brick color to be chosen from the brick manufacturer's standard colors.

1.8 REINFORCEMENT AND ANCHORAGE

- A. Multiple Wythe Joint Reinforcement: Truss or Ladder type; with moisture drip; steel wire, hot dip galvanized to ASTM A641 Class 3 after fabrication, cold drawn steel wire conforming to ASTM A82, 3/16 inch side rods with 1/8 inch cross ties.
- B. Wall Ties: Corrugated formed sheet metal, size 3/4 x 6 inches x 12 gauge, hot dip galvanized to ASTM A123 B2 uncoated steel finish.

1.9 MORTAR AND GROUT

- A. Mortar and Grout: As specified in Section 04100.

PART 2 EXECUTION

2.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Verify items provided by other sections of work are properly sized and located.
- C. Verify that built-in items are in proper location and ready for roughing into masonry work.

2.2 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied to other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

2.3 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Brick Units:
 - 1. Bond: Running.
 - 2. Coursing: Three units and three mortar joints to equal 8 inches.
 - 3. Mortar Joints: Concave.

2.4 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- D. Remove excess mortar as work progresses.
- E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- G. Isolate masonry partitions from vertical structural framing members with a control joint.
- H. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

2.5 WEEPS

- A. Install weeps in veneer at 32 inches o.c. horizontally above through-wall flashing, above shelf angles and lintels and at bottom of walls.

2.6 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Install horizontal joint reinforcement 16 inches O.C.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place joint reinforcement continuous in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Embed wall ties in masonry backup to bond veneer at maximum 24 inches o.c. vertically and 32 inches O.C. horizontally. Place at maximum o.c. each way around perimeter of openings, within of openings.
- F. Secure wall ties or strap anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches O.C. vertically and 36 inches o.c. horizontally. Place at maximum 3 inches O.C. each way around perimeter of openings, within of openings.

2.7 MASONRY FLASHINGS

- A. Extend flashings horizontally at foundation walls, above ledge or shelf angles and lintels, under parapet caps and at bottom of walls.
- B. Turn flashing up minimum 8 inches and bed into mortar joint of masonry or seal to sheathing over steel stud back-up.
- C. Lap end joints minimum 6 inches and seal watertight.
- D. Turn flashing, fold, and seal at corners, bends and interruptions.

2.8 LINTELS

- A. Install loose steel lintels over openings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
- C. Openings Up To 42 inches Wide: Place two No. 4 reinforcing bars 1 inch from bottom web.
- D. Openings From 42 inches Up To 78 inches Wide: Place two No. 5 reinforcing bars 1 inch from bottom web.
- E. Openings Over 78 inches: Reinforce openings as detailed.
- F. Do not splice reinforcing bars.
- G. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- H. Place and consolidate grout fill without displacing reinforcing.
- I. Allow masonry lintels to attain specified strength before removing temporary supports.
- J. Maintain minimum 8 inch bearing on each side of opening.

2.9 CONTROL JOINTS

- A. Do not continue horizontal joint reinforcement through control joints.

- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Size control joint in accordance with Section 07900 for sealant performance.

2.10 FIELD QUALITY CONTROL

- A. Inspect all masonry work.

2.11 CLEANING

- A. Clean work under provisions of 01700.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Replace defective mortar. Match adjacent work.
- D. Clean soiled surfaces with cleaning solution.
- E. Use non-metallic tools in cleaning operations.

END OF SECTION

05210

STEEL JOISTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Open web steel joists and shear stud connectors, with bridging, attached seats and anchors.
- B. Loose bearing plates and anchor bolts for site placement.
- C. Framed floor and roof openings greater than 18 inches.

1.2 REFERENCES

- A. ASTM A36/A36M - Structural Steel.
- B. ASTM A108 - Steel Bars, Carbon, Cold-Finished, Standard Quality.
- C. ASTM A123 - Zinc (Hot Dipped Galvanized) Coatings on Iron and Steel Products.
- D. ASTM A153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware.
- E. ASTM A307 - Carbon Steel Threaded Standard Fasteners.
- F. AWS D1.1 - Structural Welding Code.
- G. FM - Roof Assembly Classifications.
- H. SJI (Steel Joist Institute) - Specifications, Load tables and Weight Tables for Steel Joists and Joist Girders.
- I. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.
- J. UL - Fire Resistance Directory.

1.3 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Shop Drawings:
 - 1. Indicate standard designations, configuration, sizes, spacing and location of joists, joist leg extensions.
 - 2. Joist coding, bridging, connections and attachments.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with SJI, Load Tables, Weight Tables, including headers and other supplementary framing.

1.5 DELIVERY, STORAGE AND PROTECTION

- A. Section 01600 - Material and Equipment: Transport, handle, store and protect products and to SJI requirements.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Open Web Joists Members: SJI Type K, LH Longspan.
- B. Anchor Bolts, Nuts and Washers: ASTM A307, galvanized to ASTM A153.
- C. Shear Stud Connectors: ASTM A108. Forged steel, headed and uncoated.
- D. Structural Steel For Supplementary Framing and Joist Leg Extensions: ASTM A36/A36M.
- E. Welding Materials: AWS D1.1; type required for materials being welded.
- F. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.

2.2 FABRICATION

- A. Provide bottom and top chord extensions as indicated.
- B. Fabricate to achieve end bearing of:
 - 1. 2-1/2 inches on steel.
 - 2. 4 inches on masonry.
- C. Drill holes in chords necessary for attachment of wood nailers. Weld threaded lugs to chords for attachment of wood nailers.
- D. Frame special sized openings in joist web framing as detailed.

2.3 FINISH

- A. Prepare joist component parts surfaces in accordance with SSPC SP 2.
- B. Shop prime joists. Do not prime surfaces that will be fireproofed, field welded or in contact with concrete.
- C. Galvanize steel ledge angles and anchors to ASTM A123. Provide minimum 1.25oz/sq ft galvanized coating.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions prior to beginning work.

3.2 ERECTION

- A. Erect and bear joists on supports.
- B. Allow for erection loads. Provide sufficient temporary bracing to maintain framing safe, plumb and in true alignment.
- C. Coordinate placement of anchors in concrete or masonry construction for securing bearing plates or angles.
- D. After joist alignment and installation of framing, field weld joist seat to bearing plates or angles.
- E. Position and field weld joist chord extensions and wall attachments as shown on plans.
- F. Frame floor and roof openings greater than 18 inches with supplementary framing.
- G. Do not permit erection of decking until joists are braced bridged and secured or until the completion of erection and installation of permanent bridging and bracing.
- H. Do not field cut or alter structural members without approval of joist manufacturer.
- I. After erection, prime welds, abrasions and surfaces not shop primed except surfaces to be in contact with concrete.

3.3 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From True Alignment: 1/4 inch.

END OF SECTION

05500

METAL FABRICATIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Shop fabricated ferrous metal items.
- B. Shop fabricated aluminum items.

1.2 RELATED SECTIONS

- A. Section 05520 - Handrails and Railings.
- B. Section 09900 - Painting: Paint finish.
- C. Section 03300 - Cast-In-Place Concrete: Placement of metal fabrications in concrete.
- D. Section 04300 - Unit Masonry System: Placement of metal fabrications in masonry.

1.3 REFERENCES

- A. ASTM A36 - Structural Steel.
- B. ASTM A53 - Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe.
- C. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- D. ASTM A283 - Carbon Steel Plates, Shapes and Bars.
- E. ASTM A307 - Carbon Steel Bolts and Studs, 60,000 p.s.i Tensile Strength.
- F. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
- G. ASTM A501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- H. AWS A2.0 - Standard Welding Symbols.
- I. AWS D1.1 - Structural Welding Code.
- J. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.

PART 2 PRODUCTS

2.1 MATERIALS - STEEL

- A. Steel Sections: ASTM A36.
- B. Steel Tubing: ASTM A500, Grade B.
- C. Plates: ASTM A283.
- D. Pipe: ASTM A53, Grade B, Schedule 40.
- E. Bolts, Nuts, and Washers: ASTM A325 galvanized to ASTM A153 for galvanized components.
- F. Welding Materials: AWS D1.1; type required for materials being welded.
- G. Ladders: ANSI A14.3.
- H. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.

2.2 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush and hairline. Ease exposed edges to small uniform radius.
- D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.3 FABRICATION TOLERANCES

- A. Squareness: 1/8-inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

2.4 FINISHES - STEEL

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime paint items with one coat.
- D. Structural Steel Members: Galvanize after fabrication to ASTM A123. [Provide minimum 1.25 oz/sq ft galvanized coating.]
- E. Non-structural Items: Galvanized after fabrication to ASTM A123. Provide minimum 1.25 oz/sq ft galvanized coating.
- F. Chrome Plating: ASTM B177, weight, nickel-chromium alloy, satin finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.2 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply steel items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.

3.3 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components indicated on Drawings.
- D. Perform field welding in accordance with AWS D1.1.
- E. Obtain approval prior to site cutting or making adjustments not scheduled.
- F. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.

3.4 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

GRATINGS AND FLOOR PLATES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Formed floor, mezzanine and stair tread gratings.
- B. Flat surface floor plating.
- C. Perimeter closure.

1.2 RELATED SECTIONS

- A. Section 03100: Framed concrete opening.
- B. Section 05500 - Metal Fabrications.
- C. Section 09900 - Painting: Field paint finish.
- D. Section 03100: Placement of grating frames in concrete.

1.3 REFERENCES

- A. ASTM A36/A36M - Structural Steel.
- B. ASTM A123 - Zinc (Hot Galvanized) Coatings on Fabricated from Rolled, Pressed and Forged Steel Shapes, Plates, Bars and Strip.
- C. ASTM A510 - Wire Rods and Coarse Round Wire, Carbon Steel.
- D. ASTM A525 - Steel Sheet, Zinc-coated (Galvanized) by the Hot-Dip Process.
- E. ASTM A569/A569M - Steel, Carbon (0.15 Maximum Percent), Hot-Rolled Sheet and Strip Commercial Quality.
- F. AWS D1.1 - Structural Welding Code.
- G. AWS A2.0 - Standard Welding Symbols.
- H. NAAMM A202.1 - Metal Bar Grating Manual.
- I. SSPC - Steel Structures Painting Council: Steel Structures Painting Manual.

1.4 PERFORMANCE REQUIREMENTS

- A. Conform to BOCA code for applicable loads.
- B. Maximum Spacing Between Bars: To restrict pedestrian shoe heels. 3/8 inch.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate details of gratings, plates, component supports, anchorage, openings and perimeter construction details.
- C. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.

1.6 PROJECT CONDITIONS

- A. Section 01039 - Coordination and Meetings.
- B. Coordinate the Work with placement of frames, tolerances for placed frames and openings.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Sheet Steel For Die Stamping: ASTM A525; with raised lug pattern.
- B. Cross Bars: ASTM A510.
- C. Welding Materials: AWS D1.1, type required for materials being welded.
- D. Shop and Touch-Up Primer: SSPC 15, Type 1, red oxide.

2.2 ACCESSORIES

- A. Fasteners and Saddle Clips: Flange Blocks: J-Hooks: Galvanized steel.
- B. Perimeter Closure: Of same material as grating.
- C. Edge Banding: At edges and at intermediate panel edges.

2.3 FABRICATION

- A. Fabricate grates and plates to accommodate design loads.
- B. Mechanically clinch joints of intersecting metal sections.
- C. Fabricate support framing for openings.
- D. Top Surface: Serrated or raised lug.

2.4 FINISHES

- A. Clean surfaces of rust, scale, grease and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime paint items with one coat.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify that opening sizes and dimensional tolerances are acceptable.
- C. Verify that supports and anchors are correctly positioned.

3.2 INSTALLATION

- A. Place frames in correct position, plumb and level.
- B. Mechanically cut galvanized finish surfaces. Do not flame cut.
- C. Anchor by welding to saddle clips or bolting to flange blocks.
- D. Set perimeter closure flush with top of grating and surrounding construction.
- E. Secure to prevent movement.

3.3 TOLERANCES

- A. Conform to NAAMM A202.1.

3.4 CLEANING

- A. Clean welds and damaged coatings and apply one coats of touch-up primer.

END OF SECTION

FRAMING AND SHEATHING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Structural floor, wall and roof framing.
- B. Built-up structural beams and columns.
- C. Diaphragm trusses fabricated on site.
- D. Floor, wall and roof sheathing.
- E. Sill flashings.
- F. Preservative treatment of wood.
- G. Fire retardant treatment of wood.
- H. Miscellaneous framing and sheathing.
- I. Telephone and electrical panel back boards.
- J. Concealed wood blocking for support of toilet and bath accessories, wall cabinets and wood trim.

1.2 RELATED SECTIONS

- A. Section 04300: Setting anchors in concrete or masonry.
- B. Section 05500: Prefabricated steel structural supports.
- C. Sections 08111 and 08520: Window and Door openings to receive wood blocking.

1.3 REFERENCES

- A. AHA (American Hardboard Association) A135.4 - Basic Hardboard.
- B. ALSC (American Lumber Standards Committee) - Softwood Lumber Standards.
- C. ANSI A208.1 - Mat-Formed Wood Particleboard.
- D. APA (American Plywood Association).
- E. NFPA (National Forest Products Association).
- F. SPIB (Southern Pine Inspection Bureau).
- G. WCLIB (West Coast Lumber Inspection Bureau).
- H. WWPA (Western Wood Products Association).

1.4 SUBMITTALS FOR REVIEW

- A. Shop Drawings For Site Fabricated Truss Frame: Indicate dimensions, wood species and grades, component profiles, drilled holes, fasteners, connectors, erection details and sequence.

1.5 QUALITY ASSURANCE

- A. In lieu of grade stamping exposed to view lumber and plywood, submit manufacturer's certificate certifying that products meet or exceed specified requirements.
- B. Design structural shop fabricated trusses under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State of Missouri.

1.6 DELIVERY, STORAGE AND PROTECTION

- A. Section 01600 - Material and Equipment: Transport, handle, store and protect products.
- B. Protect trusses from warping or other distortion by stacking in vertical position, braced to resist movement.

PART 2 PRODUCTS

2.1 SHEATHING MATERIALS

- A. Plywood Roof Sheathing: APA Rated Sheathing Structural I Exposure Durability 1; unsanded.
- B. Wall Sheathing: ANSI A208.1 Oriented Strand Board. (OSB)
- C. Plywood Floor Sheathing: APA Rated Sheathing; Exposure Durability 2; sanded.
- D. Telephone and Electrical Panel Boards: Plywood.

2.2 UNDERLAYMENT MATERIALS

- A. Particleboard Underlayment: Structural Particleboard; wood flakes set with waterproof resin binder. Sanded faces.

2.3 SHEATHING AND UNDERLAYMENT LOCATIONS

- A. Sloped Roof Sheathing: ½” thick, 48 x 96 inch sized sheets, square edges.
- B. Above Grade Wall Sheathing: ½ inch thick, 48 x 96 inch sized sheets, square edges.
- C. Floor Sheathing: ¾” thick, 48 x 96 inch sized sheets, tongue and groove edges.
- D. Floor Underlayment: 3/8” thick, 48 x 96 inch sized sheets.

2.4 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
- B. Sill Flashing (Under Sill Gasket): Galvanized steel.
- C. Subfloor Glue: APA AFG-01, waterproof of solvent base, air cure type, cartridge dispensed.
- D. Building Paper: No.15 asphalt felt.
- E. Termite Shield: Galvanized sheet steel.

PART 3 EXECUTION

3.1 FRAMING

- A. Set structural members level and plumb, in correct position.
- B. Make provisions for erection loads and for sufficient temporary bracing to maintain structure safe, plumb and in true alignment until completion of erection and installation of permanent bracing.
- C. Place horizontal members, crown side up.
- D. Construct load bearing framing members' full length without splices.
- E. Double members at openings over 24 inches wide. Space short studs over and under opening to stud spacing.
- F. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists. Framed rigidly into joists.
- G. Bridge joists or other framing in excess of 8 feet span at mid-span. Fit solid blocking at ends of members.
- H. Place full width continuous sill flashings under framed walls on cementitious foundations. Lap flashing joint 4 inches.

- I. Coordinate installation of wood decking, wood chord metal joists, glue laminated structural units, prefabricated wood trusses or plywood web joists.

3.2 SHEATHING

- A. Secure roof sheathing with longer edge perpendicular to framing members and with ends staggered and sheet ends over bearing.
- B. Use sheathing clips between sheets between roof framing members. Provide solid edge blocking between sheets. Fully engage tongue and groove edges.
- C. Secure wall sheathing with long dimension parallel to wall studs, with ends over firm bearing and staggered.
- D. Place plywood or structural-use panel sheathing at building corners for a horizontal distance of 48 inches.
- E. Place building paper horizontally over wall sheathing; weather lap edges and ends.
- F. Secure subfloor sheathing with longer edge perpendicular to floor framing and with end joints staggered and sheet ends over bearing. Attach with subfloor glue and drywall screws.
- G. Place building paper between floor underlayment and subflooring.
- H. Install flooring underlayment after dust and dirt generating activities have ceased and prior to application of finished flooring. Apply perpendicular to subflooring, stagger joints of underlayment.
- I. Install telephone and electrical panel backboards with plywood sheathing material where required. Size the backboard by 12 inches beyond size of electrical panel.

3.3 TOLERANCES

- A. Framing Members: 1/4 inch from true position, maximum.
- B. Surface Flatness of Floor: 1/4 inch in 10 feet maximum and 1/2 inch in 30 feet maximum.

END OF SECTION

07600

FLASHING AND SHEET METAL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fascia Systems
- A. Metal Roof Flashing and Trim

1.2 RELATED SECTIONS

- A. Section 05400 – Metal Stud System
- B. Section 06112 – Framing and Sheathing
- C. Section 07900 - Sealants

1.3 REFERENCES

- A. ASTM A 526 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.
- B. ASTM A 527 – Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Lock-Forming Quality.
- C. ASTM B 209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- D. National Roofing Contractors Association (NRCA) – “Roofing and Waterproofing Manual” third edition.
- E. Sheet Metal and Air Conditioning Contractor’s National Association (SMACNA) – Architectural Sheet Metal Manual.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Manufacturer’s data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation method.
- C. Shop Drawings:
 - 1. Indicate material profile, dimensions, jointing pattern, jointing details, fastening methods, flashing, termination, and installation details.
 - 2. Show the layout of wall sections, attachment, joint details, trim flashing, accessories and air infiltration seals.
 - 3. Show thickness of treated wood nailers and substrate.
- D. Design Data:
 - 1. Submit manufacturer’s certification that product supplied meets Factory Mutual Research Corporation’s (FMRC) requirements for Roof Perimeter Flashing for use in Zone 1 and Zone 2 Windstorm Resistance Areas as defined in FME & R Loss Prevention Data Sheet 1-7 and 1-49 design recommendations, and meets the wind resistance requirements specified.
 - 2. Certify that perimeter metal edge systems furnished meet the specified design pressures as tested using ANSI/SPRI ES-1-98 test method RE-2 or RE-3 test methodology.
 - 3. Certify that membrane attachment by perimeter edge systems exceeds 100 lb/ft of force as tested by ANSI/SPRI ES-1-98 test method RE-1.
- E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches square, representing actual product, color, and pattern.

1.5 QUALITY ASSURANCE

- A. Installer qualifications: Companies specializing in sheet metal work with 5 years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Materials shall be delivered with identification labels, warnings and storage recommendations.
- D. Materials shall be stored in a clean, dry location prior to installation to prevent any damage to the contents. Store materials off the ground and protect from damage and deterioration as required by the material manufacturer.
- E. Handle materials to prevent damage to their surfaces, edges and ends of metal items. Damaged material shall be rejected and immediately removed from the site.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. Warranty Certification: Installing contractor shall certify that sheet metal work has been installed per National Sheet Metal System's printed details and specifications.
- B. Manufacturer warrants sheet metal fabrications are warranted to be free of defects in material and workmanship for a period of five (5) years from date of shipment.
- C. Provide manufacturer's Twenty (20) year finish warranty for standard coil-coated Kynar 500 colors against peeling, chalking, fading, checking and crazing, commencing upon date of final completion.
- D. No other warranties either expressed or implied are acceptable unless so stated in writing.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: McElory Metal, PO Box 1148, Shreveport, LA 71163, Toll free 800-950-6532.
- B. Equal to 26 ga. Max-Rib Ultra with Kynar 500® coating.
- C. Other manufacturer's as approved by the Architect/Engineer/Designer.

2.2 FASCIA AND ROOF EDGE SYSTEMS

- A. Provide fascia/flashing system which meets the criteria recommended by Factory Mutual Research Corporation's (FRMC) requirements for Roof Perimeter Flashing for use in Zone 1 and Zone 2 Windstorm Resistance Areas as defined in FME & R Loss Prevention Data Sheet 1-7 and 1-49.
- B. 2-Piece Fascia:
 - 1. As shown on details.
- C. Accessories:
 - 1. Closure Cleat.
 - 2. Custom Fabrications as shown on details.
- D. Fascia Covers and Accessories to be Fabricated from:
 - 1. .050 inch aluminum ASTM B 209 3105-H14 alloy.
- E. Waterdam Components:
 - 1. 0.040 inch aluminum ASTM B 209 3105-H14 alloy.

- F. Standard Length of Product: Produce components in longest possible lengths for system specified.
- G. Aluminum Finish:
 - 1. Kynar 500/Hylar 5000 from manufacturer's standard coil-coated colors.
 - a. Color - ???

2.3 METAL ROOF FLASHING & TRIM

- A. Profile: As indicated on Roof Manufacturer's standard details.
 - 1. Pitch Break.
 - 2. Valley Flashing.
 - 3. Peak Flashing.
 - 4. Ridge/Hip Flashing.
 - 5. Eave Flashing.
 - 6. Outside Corner Flashing.
 - 7. Inside Corner Flashing.
 - 8. Material and Finish: 26 ga. Steel galvanized/paint grip.
- B. Steel Finish:
 - 1. Prefinished steel with Kynar 500/Hylar 5000 from manufacturer's standard colors.

2.4 MATERIALS

- A. Prefinished Zinc-Coated Steel: Hot-dip galvanized steel, commercial quality A1 S1 G90 extra smooth, primed on both sides and finished on 1 side with 70 percent Kynar 500 based fluorocarbon coating of minimum 0.70 mils total dry film thickness.
 - 1. Strippable coating: Shop-applied liquid to front side of pre-finished metal to protect finish during fabrication, shipment, and field handling.
- B. Prefinished Aluminum Sheet: ASTM B 209, alloy 3003, coil-coated, 70 percent Kynar based fluorocarbon coating of minimum 0.70 mils total dry film thickness.

2.5 FABRICATION

- A. General Metal Fabrication: Shop-fabricate work to the greatest extent possible. Comply with details indicated on Drawings, and with applicable requirements of SMACNA. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- B. Seams: Fabricate non-moving seams in sheet metal with flat-lock seams. Form seams and solder tin edges to be seamed.
- C. Expansion and Contraction:
 - 1. Provide for thermal expansion and contraction, and building movement in completed work, without over-stressing the material, breaking connections, or producing wrinkles and distortion in finished surfaces. Make watertight and weather-resistive.
 - 2. Where subject to thermal expansion and contraction, attach members with clips to permit movement without damage, or provide slotted or oversize holes with washers only, as acceptable to Architect/Engineer/Designer.
 - 3. Make lock seam work flat and true to line, and sweat full of solder, except where installed to permit expansion and contraction.
 - a. Lap flat lock seams and soldered lap seams according to pitch, but in no case less than 3 inches. Make seams in direction of flow.
- D. Sealant Joints: Where movable, non-expansion type joints are indicated, or required for proper performance of work, form metal to provide for proper installation of sealant per SMACNA standards.
- E. Metal Separation: Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact with bituminous coatings or other permanent separation

- as recommended by manufacturer.
- F. Soldering:
1. Clean material and tin prior to soldering. Solder with heavy coppers of blunt design, properly tinned before use.
 2. Solder slowly with well-heated coppers. Heat seams thoroughly and completely fill with solder.
 3. Make exposed joints on finish surfaces full flowing and smooth.
 4. Wash acid flux with soda solution after soldering, and remove soldering flux on exposed and painted surfaces.
- G. Accessories:
1. Factory assemblies shall be furnished to maintain watertight integrity.
 2. Provide matching accessories or other special fabrications from the manufacturer; color to match specified profile unless noted otherwise.
- H. Fascia/flushing sections furnished with strippable protective vinyl masking shall have film removed immediately before installation to prevent damage to the coating if left exposed to the ultra-violet rays of sunlight.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect/Engineer/Designer of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Except as otherwise indicated, comply with SMACNA recommendations.
- C. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units. Conceal fasteners wherever possible, and set units true to line and level. Install work with laps, joints, and seams that will be permanently watertight and weather-restive.
- D. Strictly follow the material manufacturer's printed installation requirements.
- E. Completed work shall be true to line without buckling, creasing, warp or wind in finished surfaces. "Oil-canning" surfaces are not acceptable.
- F. Isolate dissimilar metals, masonry or concrete from metals using bituminous paint, tape or slip-sheet. Use gasketed fasteners where required to prevent corrosive actions.
- G. Allow sufficient clearances for expansion and contraction of linear metal components. Secure metal using continuous cleats, clips and fasteners as required by the system. No exposed face fastening shall be accepted.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Maintain prefinished surfaces in undamaged condition until date of final completion. Repair or replace damaged components, any touch-up to be indistinguishable from undamaged surface/finish.
- C. Upon completion of work, a final inspection by the owner's representative shall be made. Any necessary corrective actions will be noted and the installing contractor shall make corrections within five (5) working days. Upon acceptance of the project, any applicable warranties shall be presented to the owner's representative.

END OF SECTION

07611

CUSTOM SHEET METAL ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Pre-finished steel sheet roofing, associated flashings and underlayment.
- B. Counter flashings.
- C. Integral gutters and downspouts.
- D. Snow guards.
- E. Integral fascias.

RELATED SECTIONS

- A. Section 06112 - Framing and Sheathing: Plywood roof deck substrate.
- B. Section 06114 - Wood Blocking and Curbing: Wood blocking and battens for metal roofing substrate profiles.
- C. Section 07620 - Sheet Metal Flashing and Trim.
- D. Section 07631 - Gutters and Downspouts.
- E. Section 07900 - Joint Sealers.
- F. Section 09900 - Painting: Field painting.

1.3 REFERENCES

- A. AAMA 603.8 - Voluntary Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum.
- B. AAMA 605.2 - Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.
- C. ASTM A526/A526M - Standard Specification for Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.
- D. ASTM B32 - Standard Specification for Solder Metal.

1.4 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations and installation details.
- C. Product Data: Provide data on metal types, finishes and characteristics.
- D. Submit two samples 12x12 inches in size illustrating metal roofing mounted on plywood backing illustrating typical seam, external corner and valley material, finish and color.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements, except as otherwise noted.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal roof installations with minimum four years experience.

1.6 PRE-INSTALLATION MEETING

- A. Section 01039 - Coordination and Meetings: Pre-installation meeting.
- B. Convene one week before starting work of this section.

1.7 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01600 - Material and Equipment: Transport, handle, store, and protect.
- B. Stack material to prevent twisting, bending or abrasion and to provide ventilation. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials that may cause discoloration or staining.

1.8 WARRANTY

- A. Section 01700 - Contract Closeout. 01740 - Warranties.

PART 2 PRODUCTS

2.1 SHEET MATERIALS

- A. Pre-Finished Galvanized Steel Sheet: ASTM A361/A361M, ASTM A446/A446M, Grade A, or ASTM A526/A526M, G90 zinc coating; 0.02 inch core steel, shop pre-coated with modified silicone coating; color as selected.

2.2 ACCESSORIES

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Underlayment: ASTM D226, organic roofing felt.
- C. Slip Sheet: Rosin sized building paper.
- D. Primer: Zinc molybdate type.
- E. Protective Backing Paint: Zinc molybdate alkyd.
- F. Sealant: Type specified in Section 07900.
- G. Plastic Cement: ASTM D4586, Type I.
- H. Eave Protection Sheet: Rubberized asphalt bonded to sheet polyethylene, 40-mil total thickness, with strippable treated release paper.
- I. Downspout Boots: Cast iron.

2.3 FABRICATION

- A. Form sections true to shape, accurate in size, square and free from distortion or defects.
- B. Fabricate cleats of same material as sheet, minimum 3 inches wide, interlockable with sheet.
- C. Fabricate starter strips of same material as sheet, intermittent to minimum 3 inches wide, interlockable with sheet.
- D. Form pieces in longest practical lengths.
- E. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- F. Form material with standing seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- G. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- H. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- I. Fabricate flashings to allow toe to extend 2 inches over roofing. Return and brake edges.

- J. Fabricate snow guards in accordance with SMACNA Plate.
- 2.4 FACTORY FINISHING

- A. Class I Natural Anodized Finish: AAMA 607.1 Clear anodic coating not less than 0.7 mils thick.
- B. Primer Coat: Finish concealed side of metal sheets with primer compatible with finish system as recommended by finish system manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves or projections, properly sloped to drains, valleys and/or eaves.
- B. Verify deck is dry and free of snow or ice.
- C. Verify correct placement of wood nailers [and insulation positioning between nailers.
- D. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, reglets are in place and nailing strips located.
- E. Verify roofing termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.
- B. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.
- C. Back paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil.

3.3 INSTALLATION - EAVE (ICE DAM) PROTECTION

- A. Place eave edge and/or gable edge metal flashings tight with fascia boards. Weather lap joints 2 inches and seal with plastic cement.
- B. Apply eave protection sheet in accordance with manufacturer's instructions.
- C. Apply plastic cement at rate of approximately 1 1/4-gal/100 sq ft over starter strip.
- D. Starting from lower edge of starter strip, lay additional 36 inch wide strips of eave protection sheet in plastic cement, to produce a two ply membrane. Weather lap plies minimum 19 inches and nail in place. Lap ends minimum 6 inches. Stagger end joints of each consecutive ply.
- E. Extend eave protection sheet minimum 4 feet upslope beyond interior face of exterior wall.

3.4 INSTALLATION - ROOFING

- A. Apply underlayment over entire roof area. Minimize nail quantity.
- B. Apply slip-sheet in one layer, laid loose.
- C. Cleat and seam all joints.
- D. Use plastic cement for joints between metal and bitumen and for joints between metal and felts.
- E. Provide formed metal pans for protrusions through roof. Fill pans watertight with plastic cement.
- F. Provide integral gutters, fascias and metal splash pans.
- G. Install snow guards 18 inch up slope from eaves and valleys.

3.5 INSTALLATION - STANDING SEAM ROOFING

- A. Conform to SMACNA details.
- B. Lay sheets with long dimension perpendicular to eaves. Apply pans beginning at eaves.
- C. Lock cleats into seams.

- D. Stagger transverse joints of roofing sheets.
- E. At eaves and gable ends, terminate roofing by hooking over edge strip.
- F. Finish standing seams 1 inch high on flat surfaces and 1/2 inch high on curved surfaces.
- G. Bend up one side edge 1-1/2 inches and other edge 1-3/4 inches.
- H. Make first fold 1/4-inch wide single fold and second fold 1/2 inch wide, providing locked portion of standing seam, 5 plies in thickness.
- I. Fold lower ends of seams at eaves over at 45-degree angle.
- J. Terminate standing seams at ridge and hips by turning down with tapered fold.

3.6 INSTALLATION - BUILT-IN GUTTERS AND DOWNSPOUTS

- A. Conform to SMACNA details
- B. Longitudinal joints not acceptable
- C. At roof edges, extend gutter lining under metal roofing 6 inches minimum and terminate in 3/4 inch folded edge secured by cleats. Hook lower end of roofing into lock strip to form 3/4-inch wide loose-lock seam.
- D. Seal gutters watertight. Seal joint of gutter to drain with sealant.
- E. Connect downspouts to downspout boots at 8 inches above grade. Grout connection watertight.

3.7 INSTALLATION - FLASHINGS

- A. Conform to SMACNA details.
- B. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- C. Cleat and seam all joints.
- D. Apply plastic cement compound between metal flashings and felt flashings.
- E. Fit flashings tight in place. Make corners square W/ surfaces true and straight in planes and lines accurate to profiles.
- F. Seal metal joints watertight.

3.8 PROTECTION OF FINISHED WORK

- A. Section 01700 - Contract Closeout: Protecting installed work.
- B. Do not permit traffic over unprotected roof surface.

END OF SECTION

GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Pre-finished continuous aluminum gutters and downspouts.
- B. Precast concrete splash pads.

1.2 RELATED SECTIONS

- A. Section 09900 - Painting: Field painting of metal surfaces.

1.3 REFERENCES

- A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

1.4 DESIGN REQUIREMENTS

- A. Conform to SMACNA Manual CDA Handbook for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

1.5 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations and installation details.
- C. Samples: Submit two samples, 12 inches long illustrating component design, finish, color and configuration.

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01600 - Material and Equipment: Transport, handle, store and protect.
- B. Stack material to prevent twisting, bending or abrasion and to provide ventilation. Slope to drain.
- C. Prevent contact with materials during storage that may cause discoloration, staining or damage.

1.7 PROJECT CONDITIONS

- A. Section 01039 - Coordination and Meetings.
- B. Coordinate the work with downspout discharge pipe inlet.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Pre-Finished Aluminum Sheet: ASTM B209; 0.032 inch thick; plain finish shop pre-coated with acrylic coating; color as selected from manufacturer's standard.

2.2 COMPONENTS

- A. Gutters: SMACNA Square style profile.
- B. Connectors: Furnish required connector pieces for PVC (Polyvinyl Chloride) components.
- C. Anchors and Supports: Profiled to suit gutters and downspouts.
 - 1. Anchoring Devices: Type recommended by fabricator.

2. Gutter Supports: Straps. Spikes and ferrules.
3. Downspout Supports: Straps.
- D. Fasteners: Aluminum. Same material and finish as gutters and downspouts, with soft neoprene washers.

2.3 ACCESSORIES

- A. Splash Pads: Precast concrete type, size and profiles indicated; minimum 3000 p.s.i. at 28 days, with minimum 5 percent air entrainment.
- B. Downspout Boots: Plastic.

2.4 FABRICATION

- A. Form gutters and downspouts of profiles and size indicated.
- B. Fabricate with required connection pieces.
- C. Form sections square, true and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.
- D. Hem exposed edges of metal.
- E. Fabricate gutter and downspout accessories; seal watertight.

2.5 FACTORY FINISHING

- A. Modified silicone polyester coating: Baked enamel system conforming to AAMA 603.8.
- B. Primer Coat: Finish concealed side of metal sheets with primer compatible with finish system, as recommended by finish system manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify that contact surfaces are ready to receive work.

3.2 PREPARATION

- A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil.

3.3 INSTALLATION

- A. Install gutters, downspouts and accessories in accordance with manufacturer's instructions.
- B. Slope gutters 1/8 inch per foot
- C. Connect downspouts to downspout boots or shoes at 8 inches above grade or into storm sewer system. Seal connection watertight.
- D. Set splash pads under downspouts.

END OF SECTION

STEEL GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Prefinished continuous galvanized steel gutters and downspouts.
- B. Fastening.
- C. Precast concrete splash pads.

1.2 RELATED SECTIONS

- A. Section 07311 - asphalt roofing: Sloped roofing system.
- B. Section 09900 - Painting: Field painting of metal surfaces.

1.3 REFERENCES

- A. ASTM A361/A361M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process for Roofing and Siding.
- B. ASTM B32 - Standard Specification for Solder Metal.
- C. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- D. SMACNA (Sheet Metal and Air Conditioning Contractors National Association) - Architectural Sheet Metal Manual.
- E. Pre-Finished Galvanized Steel Sheet: ASTM A755 coil coated.

1.4 DESIGN REQUIREMENTS

- A. Conform to BOCA code for size and method of rainwater discharge.

1.5 DELIVERY, STORAGE, AND PROTECTION

- A. Section 01600 - Material and Equipment: Transport, handle, store and protect.
- B. Stack material to prevent twisting, bending or abrasion and to provide ventilation. Slope to drain.
- C. Prevent contact with materials during storage that may cause discoloration, staining or damage.

1.6 PROJECT CONDITIONS

- A. Section 01039 - Coordination and Meetings.
- B. Coordinate the work with downspout discharge pipe inlet.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Galvanized Steel Sheet: ASTM A361/A361M, ASTM A446/A446M, Grade A or ASTM A526/A526M, G90 zinc coating; 26 gauge core steel.
- B. Primer: Zinc molybdate Galvanized iron type.
- C. Protective Backing Paint: FS TT-C-494, bituminous.
- F. Solder: ASTM B32; 50/50 type
- G. Base Metal: ASTM A653, zinc coating.
- H. Exposed Finish: Silicone polyester or acrylic or electrolytic powder coating.

2.2 COMPONENTS

- A. Gutters: CDA Square or profile as indicated on drawings.
- B. Downspouts: CDA Rectangular or profile as indicated on drawings.
- C. Anchors and Supports: Profiled to suit gutters and downspouts.
 - 1. Anchoring Devices: In accordance with CDA requirements.
 - 2. Gutter Supports: Spikes and ferrules.
 - 3. Downspout Supports: Brackets.
- D. Fasteners: Same material and finish as gutters and downspouts, with soft neoprene washers.

2.3 ACCESSORIES

- A. Splash Pads: Precast concrete type, [size] [sizes] and profiles indicated; minimum 3000 p.s.i. at 28 days, with minimum 5 percent air entrainment.
- B. Downspout Boots: PVC or material compatible with storm sewer system.

2.4 FABRICATION

- A. Form gutters and downspouts of profiles and size indicated and free of distortion or defects.
- B. Fabricate trim, flashing and other metal components from same material as metal gutter sections.
- C. Fabricate strap ties of compatible material as gutters, to interlock with gutter.
- D. Fabricate connector/expansion clips of same material as gutter that interlock with gutter by mechanical fastener.
- E. Form gutter and downspout sections in single length sheets.
- F. Hem exposed edges on ½-inch miter.
- G. Provide expansion joints (slip joints) on gutters exceeding 50 feet in length.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify that surfaces are ready to receive work.

3.2 PREPARATION

- A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil.

3.3 INSTALLATION

- A. Install gutters, downspouts and accessories in accordance with manufacturer's instructions.
- B. Sheet Metal: Join lengths with formed seams sealed or soldered watertight. Flash and seal gutters to downspouts and accessories.
- C. Solder metal joints for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.
- D. Install gutters ¾ inches below slope of roof at outside edge.
- E. Connect downspouts to downspout boots at 8 inches above grade or to existing storm sewer system.
- F. Locate downspouts per Drawings.
- G. Strap downspouts at maximum 30 inches on center.
- H. Set splash pads under downspouts (where required). Secure in place.

END OF SECTION

07900

JOINT SEALERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Sealants and joint backing.
- B. Precompressed foam sealers.
- C. Hollow gaskets.

1.2 RELATED SECTIONS

- A. Section 07311: Sealants required in conjunction with waterproofing.
- B. Section 08800 - Glazing: Glazing sealants and accessories.
- C. Section 09260 - Gypsum Board Systems: Acoustic sealant.

1.3 REFERENCES

- A. ASTM C834 - Standard Specification for Latex Sealing Compounds.
- B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- C. ASTM C1193 - Standard Guide for Use of Joint Sealants.
- D. ASTM D1056 - Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
- E. ASTM D1565 - Standard Specification for Flexible Cellular Materials -Vinyl Chloride Polymers and Copolymers (Open-Cell Foam).
- F. ASTM D1667 - Standard Specification for Flexible Cellular Materials -Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section and approved by manufacturer.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.6 COORDINATION

- A. Section 01039 - Coordination and Meetings: Coordination requirements.
- B. Coordinate the work with all sections referencing this section.

1.7 WARRANTY

- A. Section 01700 - Warranties.
- B. Correct defective work within a five-year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal and exhibit loss of adhesion or cohesion or do not cure.

1.8 SEALANTS

- A. Type I - General Purpose Exterior Sealant: Polyurethane or Polysulfide; ASTM C920, Grade NS, Class 25, Uses M, G and A; single or multi- component.
 - 1. Standard colors matching finished surfaces.

- B. Type II - Exterior Expansion Joint Sealer: Precompressed foam sealer; urethane with water-repellent:
 - 1. Face color: Gray.
 - 2. Size as required providing watertight seal when installed.
 - 3. Provide product recommended by manufacturer for traffic-bearing use.
 - 4. Applications: Use for:
 - a. Exterior wall expansion joints
 - b. Paving surface joints
 - c. Set in floor components

- C. Type III - Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, non-drying, non-skinning, non-curing.
 - 1. Applications: Use for:
 - a. Concealed sealant bead in sheet metal work.
 - b. Concealed sealant bead in siding overlaps.

- D. Type IV - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
 - 1. Standard colors matching finished surfaces. Applications: Use for:
 - a. Interior wall and ceiling control joints.
 - b. Joints between door and window frames and wall surfaces.
 - c. Other interior joints for which no other type of sealant is indicated.

- E. Type V - Bathtub/Tile Sealant: White silicone; ASTM C920, Uses M and A; single component, mildew resistant.
 - 1. Applications: Use for:
 - a. Joints between plumbing fixtures and floor and wall surfaces.
 - b. Joints between kitchen and bath countertops and wall surfaces.

- F. Type VI - Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C920, Grade P, Class 25, Uses T, M and A; single or multi-component.
 - 1. Approved by manufacturer for wide joints up to 1-1/2 inches.
 - 2. Standard colors matching finished surfaces.
 - 3. Applications: Use for:
 - a. Expansion joints in floors.

- G. Type VII - Sealant for Continuous Water Immersion: Polysulfide or Polyurethane; ASTM C920, Grade NS, Class 25, Uses M and A; approved by manufacturer for continuous water immersion; single or multi- component.
 - 1. Standard colors matching finished surfaces.
 - 2. Applications: Use for:
 - a. Vehicle washing booths

- H. Type VIII - Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C920, Class 25, Uses T, M and A; single or multi-] component.
 - 1. Gray color.
 - 2. Applications: Use for:
 - a. Joints in sidewalks and vehicular paving.

PART 2 PRODUCTS

2.2 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D1056, sponge or expanded rubber; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter that might impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. Perform installation in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.
- H. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.
- I. Compression Gaskets: Avoid joints except at ends, corners, and intersections; seal all joints with adhesive; install with face 1/8 to 1/4 inch below adjoining surface.

3.4 CLEANING

- A. Clean adjacent soiled surfaces.

3.5 PROTECTION OF FINISHED WORK

- A. Protect sealants until cured.

END OF SECTION

08111

STANDARD STEEL DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Non-rated, fire rated and thermally insulated steel doors and panels.
- B. Louvers. Glass and glazing.

1.2 RELATED SECTIONS

- A. Section 08112 - Standard Steel Frames.
- B. Section 08710 - Door Hardware.
- C. Section 08800 - Glazing: Glass for doors.
- D. Section 09900 - Painting: Field painting of doors.

1.3 REFERENCES

- A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
- B. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- C. ASTM E152 - Methods of Fire Tests of Door Assemblies.
- D. NFPA 80 - Fire Doors and Windows.
- E. NFPA 252 - Fire Tests for Door Assemblies.
- F. SDI-100 - Standard Steel Doors and Frames.
- G. UL 10B - Fire Tests of Door Assemblies.

1.4 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate door elevations, internal reinforcement, closure method and cutouts for glazing and louvers.

1.5 SUBMITTALS FOR INFORMATION

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

- A. Manufacturer: Specializing in manufacturing products specified in this section with three years experience.

1.7 REGULATORY REQUIREMENTS

- A. Installed Door and Panel Assembly: Conform to NFPA 80 for fire rated class as scheduled.

1.8 DELIVERY, STORAGE AND PROTECTION

- A. Section 01600 - Material and Equipment: Transport, handle, store and protect products.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage.
- C. Break seal on site to permit ventilation.

1.9 PROJECT CONDITIONS

- A. Section 01039 - Coordination and Meetings.
- B. Coordinate frame installation with size, location, and installation of service utilities.
- C. Coordinate the work with door opening construction, doorframes and door hardware installation.
- D. Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

PART 2 PRODUCTS

2.1 ACCEPTABLE PRODUCTS:

- A. Allied Steel Products, Inc.
- B. Amweld/Div. American Welding & Mfg. Co.
- C. Ceco Corp.
- D. Curries Mfg., Inc.
- E. Pioneer Builders Products Corp./Div. CORE Industries, Inc.
- F. Steelcraft/Div. American Standard Co.
- G. Republic Builders Products Corp./Subs. Republic Steel.

2.2 DOORS AND PANELS

- A. Astragals for Double Doors: Steel T shaped, specifically for double doors (As required).
- B. Fabricate doors with hardware reinforcement welded in place.
- C. Attach fire rated label to each fire rated door unit.
- D. Configure exterior doors with special profile to receive recessed weather stripping.
- E. Type and Design:
 - 1. Tightly hemmed vertical seam on lock and hinge edges, with top flush channel and beveled lock edge, in the dimensions and types shown on the drawings, reinforced for the finish hardware being provided under Section 08710 of these Specifications, and in the following gauges:
 - a. Interior Doors: 18 gauge honeycomb core. Labeled and/or Non-labeled.
 - b. Exterior Doors: 16 gauge insulated core. Labeled and/or Non-labeled.

2.3 FINISH

- A. Steel Sheet: Exterior doors to be galvanized to ASTM A525.
- B. Primer: Air-dried.
- C. Paint per Specification Section 09900: color as selected.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.

3.2 INSTALLATION

- A. Install doors in accordance with SDI-100 and DHI.
- B. Coordinate installation of glass and glazing.
- C. Install door louvers, plumb and level.
- D. Coordinate installation of doors with installation of frames and hardware specified in Section 08710.
- E. Touch-up finished doors.

3.3 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.4 ADJUSTING

- A. Section 01650 - Starting of Systems: Adjusting installed work.
- B. Adjust door for smooth and balanced door movement.

3.5 SCHEDULE

- A. Refer to Door and Frame Schedule on architectural drawings.

END OF SECTION

08112

STANDARD STEEL FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Non-rated and fire rated steel frames.
- B. Interior and Exterior glazed light frames.

1.2 RELATED SECTIONS

- A. Section 08111 - Standard Steel Doors.
- B. Section 08710 - Door Hardware: Hardware, silencers and weather stripping.
- C. Section 08800 - Glazing.

1.3 REFERENCES

- A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
- B. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
- C. ASTM E152 - Methods of Fire Tests of Door Assemblies.
- D. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- E. NFPA 80 - Fire Doors and Windows.
- F. NFPA 252 - Fire Tests for Door Assemblies.
- G. SDI-100 - Standard Steel Doors and Frames.
- H. UL 10B - Fire Tests of Door Assemblies.

1.4 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate frame elevations, reinforcement, anchor types and spacing, location of cutouts for hardware and finish.

1.5 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Fire Rated Frame Construction: Conform to NFPA 252 or UL 10B.
- B. Installed Frame Assembly: Conform to NFPA 80 for fire rated class same as fire door.

1.7 DELIVERY, STORAGE AND PROTECTION

- A. Section 01600 - Material and Equipment: Transport, handle, store and protect products.
- B. Accept frames on site in manufacturer's packaging. Inspect for damage.

1.8 PROJECT CONDITIONS

- A. Section 01039 - Coordination and Meetings.
- B. Coordinate the work with frame opening construction, door and hardware installation.

- C. Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

1.9 FRAMES

- A. Frames: To suit SDI-100 Grade and Model of door specified in Section 08111.

PART 2 PRODUCTS

2.1 FRAMES

- A. 16 gauge. To suit SDI-100 Grade.
 - 1. Provide drywall wrap around frames for interior and exterior doors.

2.2 ACCESSORIES

- A. Removable Stops: Rolled steel channel shape, butted corners; prepared for countersink style tamper proof screws.
- B. Bituminous Coating: Fibered asphalt emulsion.
- C. Primer: Zinc chromate type.
- D. Silencers: Specified in Section 08710.
- E. Weatherstripping: Specified in Section 08710.

2.3 FABRICATION

- A. Fabricate frames as welded unit.
- B. Mullions for Double Doors: Fixed type, of same profiles as jambs.
- C. Transom Bars for Glazed Lights: Fixed type, of same profiles as jamb and head.
- D. Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.
- E. Reinforce frames wider than 4" with roll formed steel channels fitted tightly into frame head, flush with top.
- F. Configure exterior frames with special profile to receive recessed weather stripping.
- G. Attach fire rated label to each fire rated door unit.

2.4 FINISH

- A. Steel Sheet: Galvanized.
- B. Primer: Air-dried.
- C. Paint per Specification Section 09900: color as selected.
- D. Coat inside of frame profile with bituminous coating.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.

3.2 INSTALLATION

- A. Install frames in accordance with SDI-100 and DHI.
- B. Coordinate with masonry, gypsum board or concrete wall construction for anchor placement.
- C. Coordinate installation of glass and glazing.
- D. Coordinate installation of frames with installation of hardware specified in Section 08710 and doors in Section 08111.

- E. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

3.3 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion: 1/8" measured with straight edges, crossed corner to corner.

3.4 SCHEDULE

- A. Refer to Door Schedule on drawings.

END OF SECTION

PRE-ENGINEERED BUILDINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Pre-engineered, shop fabricated structural steel building frame.
- B. Insulated metal wall and sloped roof system including soffits, gutters and downspouts, roof mounted equipment curbs and wall mounted equipment frames.
- C. Skylights.

1.2 RELATED SECTIONS

- A. Section 03300: Concrete footings, grade beams and floor slab.
- B. Section 07210: Subgrade insulation at foundation perimeter.
- C. Section 07900: Joint Sealers.
- D. Section 08110: Metal doors and frames.
- E. Section 08360: Overhead doors.
- F. Section 08520: Aluminum windows.
- G. Section 09900: Painting: Finish painting of exterior primed steel surfaces, inside surface of liner sheet, and steel doors and frames.

1.3 REFERENCES

- A. AISC - Specification for Structural Steel for Buildings - Allowable Stress Design and Plastic Design.
- B. ASTM A123 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- C. ASTM A325/A325M - High Strength Bolts for Structural Steel Joints.
- D. ASTM A446/A446M - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
- E. ASTM A501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- F. ASTM A529/A529M - Structural Steel with 42 k.s.i. Minimum Yield Point (1/2 in Maximum Thickness).
- G. ASTM C991 - Flexible Glass Fiber Insulation for Pre-Engineered Metal Buildings.
- H. AWS A2.0 - Standard Welding Symbols.
- I. AWS D1.1 - Structural Welding Code - Steel.
- J. MBMA (Metal Building Manufacturers Association) - Metal Building Systems Manual.
- K. UL - Building Materials Directory - Roof Deck Construction.

1.4 SYSTEM DESCRIPTION

- A. Clear span equal gabled slope rigid frame with tapered columns and tapered rafter sections of shop welded steel plates. Refer to Drawings.

1.5 DESIGN REQUIREMENTS

- A. Thermal resistance of Installed Wall System: R-value of 25.
- B. Thermal Resistance of Installed Roof System: R-value of 30.
- C. Design members to withstand 20 p.s.f. non-reducible snow load, and 5 p.s.f. collateral load (minimum) or as determined by the collaboration of equipment suppliers and 80 mph design loads due to pressure and suction of wind. Exposure "C". Design seismically as required per geographic region.
- D. Exterior wall and roof system shall withstand imposed loads with maximum allowable deflection of span: 1/180.
- E. Provide drainage to exterior for water entering or condensation occurring within wall or roof system.
- F. Permit movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to temperature range of -15 to +115 degrees F.
- G. Size and fabricate wall and roof systems free of distortion or defects detrimental to appearance or performance.

1.6 SUBMITTALS FOR REVIEW

- A. Section 01300 - Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate assembly dimensions, locations of structural members, connections, attachments and openings; wall and roof system dimensions, panel layout, general construction details, anchorages and method of anchorage, method of installation; framing anchor bolt settings, sizes and locations from datum and foundation loads; indicate welded connections with AWS A2.0 welding symbols; provide professional seal and signature.
- C. Samples: Submit two samples of precoated metal panels for each color selected, 12x12 inch in size illustrating color and texture of finish.
- D. Perform Work in accordance with BOCA 1999.
- E. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- F. Erector Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience or approved by manufacturer.
- G. Design structural components, develop shop drawings, and perform shop and site work under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State of Missouri.

1.7 PRE-INSTALLATION MEETING

- A. Section 01039 - Coordination and Meetings: Pre-installation meeting.

- B. Convene one week before starting work of this section.

1.8 WARRANTY

- A. Provide a five-year warranty for weather tightness of building enclosure elements after installation.

PART 2 PRODUCTS

2.1 MATERIALS - FRAMING

- A. Structural Steel Members: ASTM A36/A36M.
- B. Structural Tubing: ASTM A500, Grade B
- C. Plate or Bar Stock: ASTM A529/A529M.
- D. Anchor Bolts: ASTM A307, unprimed.
- E. Bolts, Nuts, and Washers: ASTM [A325, galvanized to ASTM A153.
- F. Welding Materials: AWS D1.1; type required for materials being welded.
- G. Primer: 1 to 2 mils. Keeping with Steel Structures Painting Council Paint Specification No. 25 and Federal Specifications TT-P-636-D and TT-P-664-C.
- H. Grout: ASTM C1107, Non-shrink type, premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents, capable of developing minimum compressive strength of 2400 p.s.i. in two days and 7000 p.s.i. in 28 days.

2.2 FABRICATION - WALL AND ROOF SYSTEMS

- A. Siding: Minimum 26 gauge; metal thickness, profile indicated, 1 3/16 inch deep, lapped edges.
- B. Roofing: Minimum 24 gauge; metal thickness, Standing seam profile, lapped edges fitted with continuous gaskets.
- C. Soffit Panels: Minimum 26 gauge; flat, perforated for ventilation.
- D. Interior Liner Panels: Minimum 26 gauge metal thickness, ribbed wall panels, lapped edges.
- E. Girts/Purlins: Rolled formed structural shape to receive siding, roofing and liner sheet.
- F. Internal and External Corners: Same material thickness and finish as adjacent material, profile shop cut and factory mitered to required angles. Back brace mitered internal corners.
- G. Flashings, Closure Pieces, Fascia, Infills and Caps. Same material and finish as adjacent material, profile to suit system.
- H. Fasteners: To maintain load requirements and weather tight installation, same finish as cladding, non-corrosive type.

2.3 FABRICATION - GUTTERS AND DOWNSPOUTS

- A. Gutters and Downspouts: Minimum 26 gauge metal thickness.
- B. Form gutters and downspouts and scuppers of profile and size as recommended by building Manufacturer to collect and remove water. Fabricate with connection pieces.
- C. Form sections in maximum possible lengths. Hem exposed edges. Allow for expansion at joints.
- D. Fabricate support straps of same material and finish as wall metal, color as selected.

2.4 FINISHES

- A. Framing Members: Clean, prepare and shop prime. Do not prime surfaces to be field welded.
- B. Exterior Surfaces of Wall Components and Accessories: Precoated enamel on steel of flouropolymer (Kynar) finish, color as selected from manufacturer's standard range.
- A. Exterior Surfaces of Roof Components and Accessories: Galvalum finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting

- work.
 - B. Verify that foundation, floor slab, mechanical and electrical utilities and placed anchors are in correct position
- 3.2 ERECTION - FRAMING
- A. Erect framing in accordance with AISC Specification.
 - B. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation of permanent bracing. Locate braced bays as indicated on drawings.
 - C. Set column base plates with non-shrink grout to achieve full plate bearing.
 - D. Do not field cut or alter structural members without approval.
 - E. After erection, prime welds, abrasions and surfaces not shop primed.
- 3.3 ERECTION - WALL AND ROOFING SYSTEMS
- A. Install in accordance with manufacturer's instructions.
 - B. Exercise care when cutting prefinished material to ensure cuttings does not remain on finish surface.
 - C. Fasten cladding system to structural supports, aligned level and plumb.
 - D. Locate end laps over supports. End laps minimum 2 inches. Place side laps over bearing.
 - E. Provide expansion joints where indicated.
 - F. Use concealed fasteners on roof.
 - G. Install insulation and vapor retarder utilizing adhesive for attachment. Place vapor retarder for support between framing members.
 - H. Install sealant and gaskets to prevent weather penetration.
 - I. Thermal-break mastic strip continuous horizontally along the outside of all exterior girts before the attachment of the exterior metal panels.
- 3.4 ERECTION - GUTTER AND DOWNSPOUT
- A. Rigidly support and secure components. Joint lengths with formed seams sealed watertight. Flash and seal gutters to downspouts.
 - B. Apply bituminous paint on surfaces in contact with cementitious materials.
 - C. Slope gutters minimum 1/8 inch/ft.
 - D. Connect downspouts to storm sewer system.
- 3.5 ERECTION - SKYLIGHT
- A. Install in accordance with manufacturer's instructions.
 - B. Coordinate with installation of roofing system and related flashings.
 - C. Apply bituminous paint on aluminum surfaces of units in contact with dissimilar metals.
 - D. Provide weather tight installation.
- 3.6 TOLERANCES
- A. Framing Members: 1/4 inch from level; 1/8 inch from plumb.
 - B. Siding and Roofing: 1/8 inch from true position.

END OF SECTION

15400

PLUMBING SYSTEMS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Water piping.
 - 2. Sanitary drainage.
 - 3. Condensate piping.
 - 4. Testing.
- B. Comply with other Division 15 Sections, as applicable. Refer to other Divisions for coordination of work.

1.2 SUBMITTALS

- A. Make submittals for all products specified in the specification.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Water Piping Above Grade, Type "L" hard drawn, seamless copper water tube, ASTM B88 and Federal Specification WW-T-799. Joined with wrought copper pressure fittings, ANSI B16.22. Make joints using "lead free" solder and a non-corrosive paste-type flux. Core solder is not allowed. Solder will be solid string or wire type. Where soldered copper piping is connected to threaded brass piping, use a cast brass adaptor.
- B. Water Piping Below Grade, Type "K" hard drawn, seamless copper water tube, ASTM B88 and Federal Specification WW-T-799. Joined with wrought copper pressure fittings, ANSI B16.22. Make joints using "lead free" solder and a non-corrosive paste-type flux. Core solder is not allowed. Solder will be solid string or wire type. Where soldered copper piping is connected to threaded brass piping, use a cast brass adaptor.
- C. Make piping connections to fixtures and equipment with chrome-plated seamless brass tube, ASTM B-125 and Federal Specification WW-T0791. No ferrous piping or materials are allowed in water piping smaller than 4 inches.

2.2 SANITARY DRAINAGE

- A. Sanitary Drainage lines (Soil, Waste and Vent): Cast iron soil pipe and fittings, coating inside and outside, ASTM A74 and Federal Specification WW-P-401. Label with Cast Iron Soil Pipe Institutes' "Mark of Quality and Permanence". Weights of pipe are required by code for location and duty. Joints shall be fabricated by use of "Push-On" type gasketed joints (above or below ground) or "No-Hub" mechanical joints (above ground only). Where permitted by local codes, PVC-DWV Plastic Schedule 40, NSF Seal CS-272 may be used for sanitary drainage pipes (soil, waste, and vent), with solvent-welded joints.

2.3 VALVES

- A. Valves for Domestic Water Piping Systems: Nibco S580 or equal.

2.4 PRESSURE REDUCING VALVE

- A. When the water system static pressure is greater than 75 PSI, furnish and install a pressure-reducing valve ahead of all fixtures and located in an accessible place. Set pressure at 50 PSI downstream of backflow preventer. Contractor to verify supply pressure.

2.5 COMMERCIAL TYPE WATER HAMMER ARRESTERS

- A. Provide commercial type water hammer arrester on hot and cold water supplies as generally indicated, with precise location and sizing to be in accordance with PD1-WH201.
- B. Water hammer arresters, where concealed, shall be accessible by means of access doors or removable panels.
- C. Water hammer arresters shall be in accordance with PD1-WH201, as furnished by Watt, Josam or equal.
- D. Vertical capped pipe columns will not be permitted.

2.6 BACKFLOW PREVENTER

- A. Provide a Watts #909 reduced pressure backflow preventer for the domestic water service.

2.6 PLUMBING FIXTURES

- A. Provide and install fixtures as shown on plans.

PART 3 EXECUTION

3.1 PIPING INSTALLATION

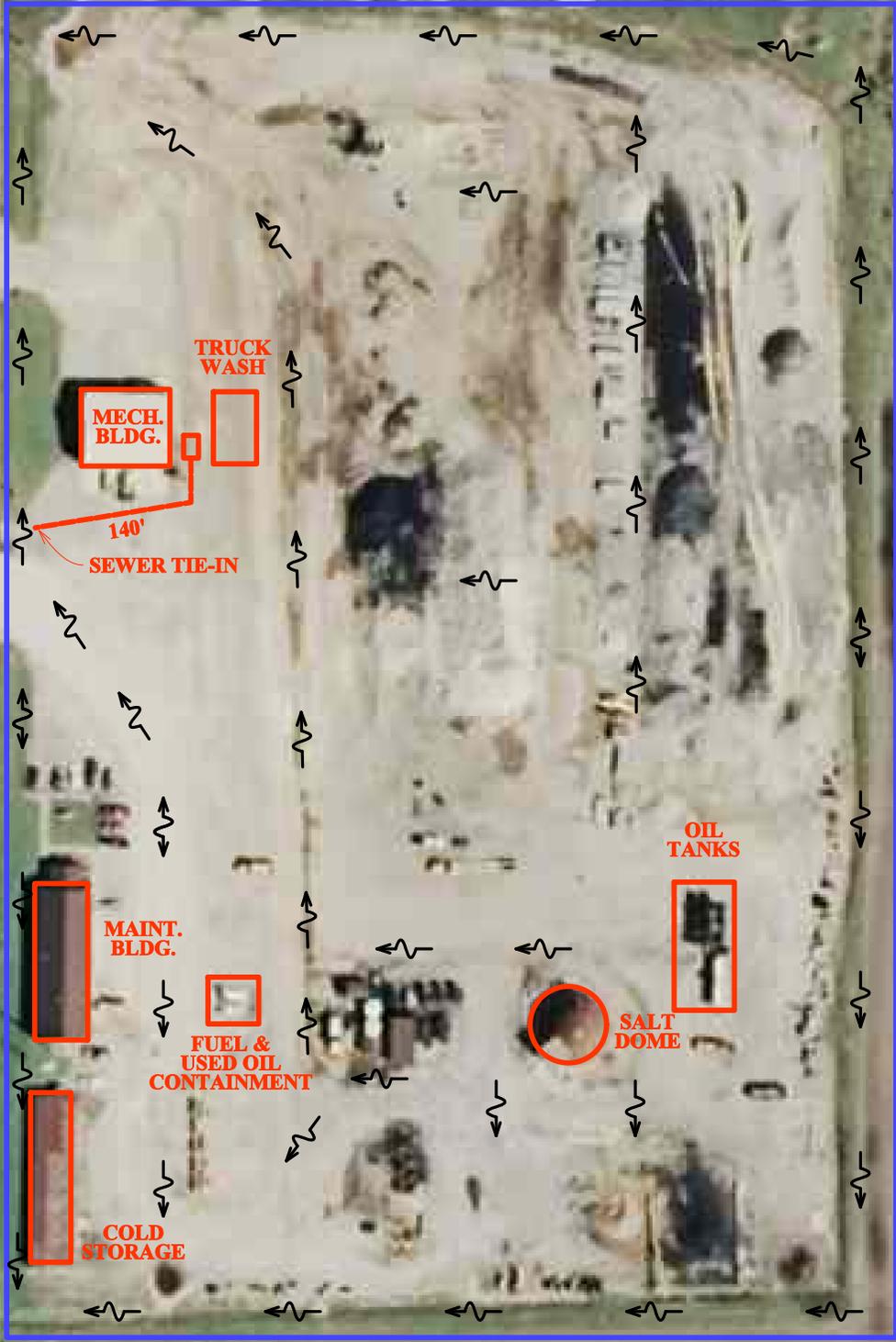
- A. Install piping neatly and parallel with or perpendicular to lines of the structure. Install pipe hangers to maintain accurately aligned piping systems, adequately supported both laterally and vertically. Install horizontal soil, waste, and vent pipe with a grade of 1/4" per foot where possible and not less than 1/8" per foot. Where practicable, connect two or more vents together and extend as one vent through roof. Make vent connections to stacks by appropriate use of 45 wyes, long sweep quarter bends, sixth, eighth or sixteenth bends, except that sanitary tees may be used on the vertical stacks.
- B. Extend condensate drain piping from units with condensate discharge.
- C. Install drains at all low points and vents at high points in water distribution system.

3.2 PIPING

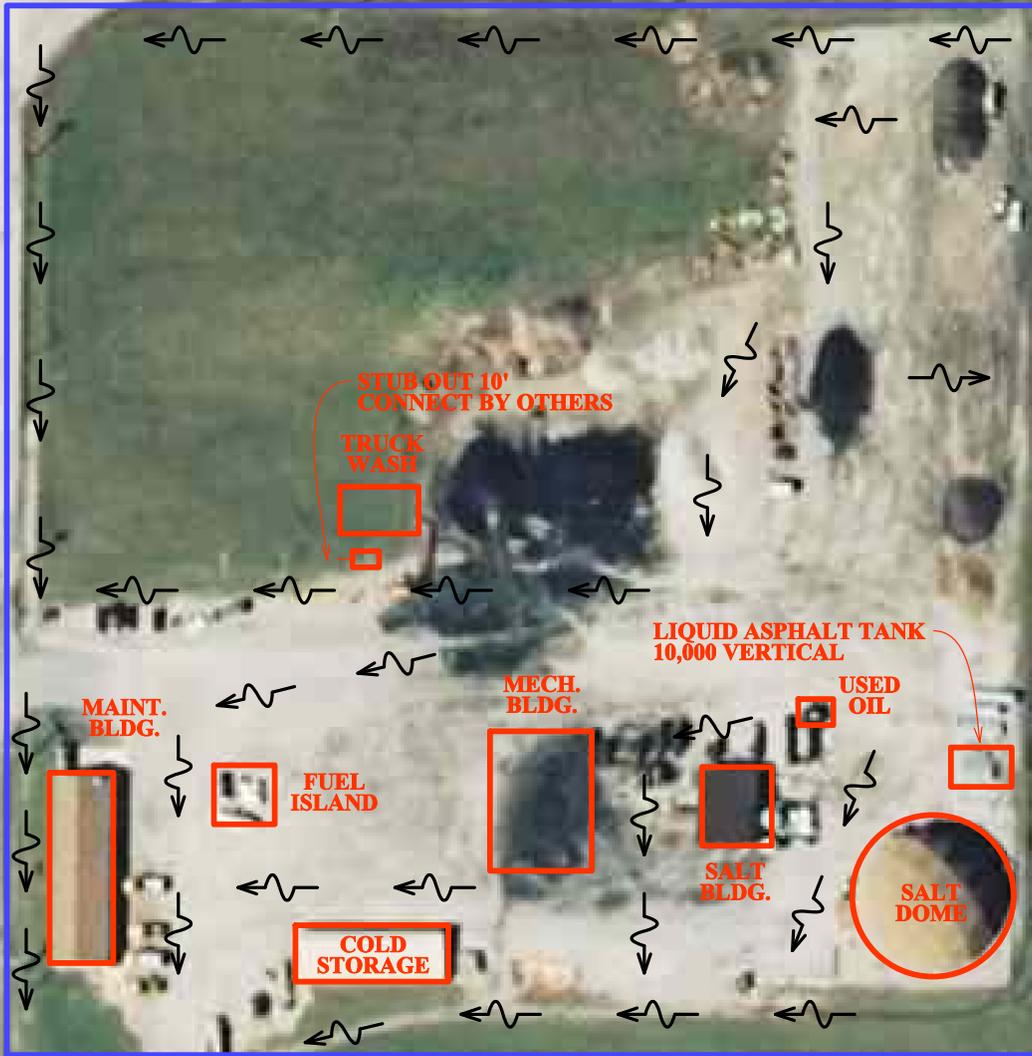
- A. Refer to Section 15700 for insulation requirements.

3.3 PIPE TESTS

- A. Test water piping before installing equipment and before insulation is applied, using specified methods and conditions. Subject piping to test for not less than 24 hours under inspection by the Engineer. Make necessary replacements and repairs and repeat tests until entire system is accepted as satisfactory. Work includes testing equipment. After installation of equipment, operate systems; clean out scale, dirt, oil, waste and foreign matter, and correct additional leaks. Test underground piping prior to backfilling.
- B. Test plumbing drainage systems under 10 foot static head. Test water systems under 150 PSIG hydrostatic pressure.
- C. Flush system thoroughly of dirt and foreign matter, then fill with water treated with 50 ppm of chlorine. During filling process, open valves and faucets several times to assure treatment of entire system. Leave treated water in system for 24 hours after which time system may be flushed; if residual chlorine is not less than 10 ppm, repeat flushing. After sterilization, receive approval by regulatory agency on samples of water in system.



ARROWS INDICATE WATER DRAINAGE ON MODOT/MEXICO MAINT. LOT



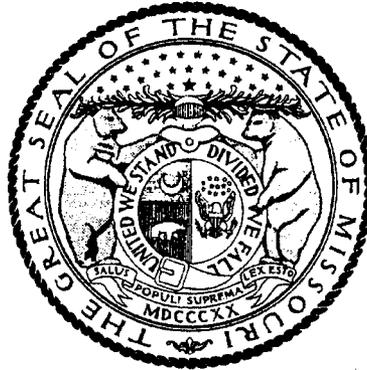
ARROWS INDICATE WATER DRAINAGE ON MODOT/SHELBINA MAINT. LOT



Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



JEREMIAH W. (JAY) NIXON, Governor

Annual Wage Order No. 17

Section 004

AUDRAIN 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

Carla Buschjost, Director
Division of Labor Standards

This Is A True And Accurate Copy Which Was Filed With The Secretary of State: **March 10, 2010**

Last Date Objections May Be Filed: **April 9, 2010**

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	*Effective Date of Increase	*	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Asbestos Worker			\$15.00	FED		\$1.46
Boilermaker			\$32.30	57	7	\$20.01
Bricklayers - Stone Mason			\$27.48	59	7	\$13.60
Carpenter			\$23.29	60	15	\$11.00
Cement Mason			\$25.08	9	3	\$11.60
Electrician (Inside Wireman)			\$29.92	28	7	\$11.73 + 13%
Communication Technician			USE ELECTRICIAN (INSIDE WIREMAN) RATE			
Elevator Constructor		a	\$40.945	26	54	\$21.505
Operating Engineer						
Group I			\$25.92	86	66	\$18.37
Group II			\$25.92	86	66	\$18.37
Group III			\$24.67	86	66	\$18.37
Group III-A			\$25.92	86	66	\$18.37
Group IV			\$23.69	86	66	\$18.37
Group V			\$26.62	86	66	\$18.37
Pipe Fitter		b	\$34.00	91	69	\$21.43
Glazier		c	\$24.35	122	76	\$14.22 + 3.4%
Laborer (Building):						
General			\$20.31	42	44	\$9.94
First Semi-Skilled			\$22.31	42	44	\$9.94
Second Semi-Skilled			\$21.31	42	44	\$9.94
Lather			USE CARPENTER RATE			
Linoleum Layer & Cutter			\$28.43	92	26	\$11.40
Marble Mason			\$20.62	124	74	\$12.03
Millwright			\$24.29	60	15	\$11.00
Iron Worker			\$26.41	11	8	\$17.80
Painter			\$21.40	18	7	\$9.82
Plasterer			\$23.89	94	5	\$11.27
Plumber		b	\$34.00	91	69	\$21.43
Pile Driver			\$24.29	60	15	\$11.00
Roofer			\$27.25	12	4	\$11.89
Sheet Metal Worker			\$27.89	40	23	\$12.92
Sprinkler Fitter			\$30.84	33	19	\$15.80
Terrazzo Worker			\$27.48	124	74	\$13.60
Tile Setter			\$20.62	124	74	\$12.03
Truck Driver - Teamster						
Group I		d	\$26.265	35	36	\$8.65
Group II		d	\$26.425	35	36	\$8.65
Group III		d	\$26.415	35	36	\$8.65
Group IV		d	\$26.535	35	36	\$8.65
Traffic Control Service Driver			\$26.415	22	55	\$9.045
Welders - Acetylene & Electric		*				

Fringe Benefit Percentage is of the Basic Hourly Rate

Attention Workers: If you are not being paid the appropriate wage rate and fringe benefits contact the Division of Labor Standards at (573) 751-3403.

**AUDRAIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

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. 9: Means the regular workday starting time of 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one hour to 9:00 a.m. All work performed in excess of the regular work day and on Saturday shall be compensated at one and one-half (1½) times the regular pay. In the event time is lost during the work week due to weather conditions, the Employer may schedule work on the following Saturday at straight time. All work accomplished on Sunday and holidays shall be compensated for at double the regular rate of wages. The work week shall be Monday through Friday, except for midweek holidays.

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. 12: Means the work week shall commence on Monday at 12:01 a.m. and shall continue through the following Friday, inclusive of each week. All work performed by employees anywhere in excess of forty (40) hours in one (1) work week, shall be paid for at the rate of one and one-half (1½) times the regular hourly wage scale. All work performed within the regular working hours which shall consist of a ten (10) hour work day except in emergency situations. Overtime work and Saturday work shall be paid at one and one-half (1½) times the regular hourly rate. Work on recognized holidays and Sundays shall be paid at two (2) times the regular hourly rate.

NO. 18: Means the regular work day shall be eight (8) hours. Working hours are from six (6) hours before Noon (12:00) to six (6) hours after Noon (12:00). The regular work week shall be forty (40) hours, beginning between 6:00 a.m. and 12:00 Noon on Monday and ending between 1:00 p.m. and 6:00 p.m. on Friday. Saturday will be paid at time and one-half (1½). Sunday and Holidays shall be paid at double (2) time. Saturday can be a make-up day if the weather has forced a day off, but only in the week of the day being lost. Any time before six (6) hours before Noon or six (6) hours after Noon will be paid at time and one-half (1½).

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.

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.

**AUDRAIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 28: Means a regular workday shall consist of eight (8) hours between 7:00 a.m. and 5:30 p.m., with at least a thirty (30) minute period to be taken for lunch. Five (5) days a week, Monday through Friday inclusive, shall constitute a work week. The Employer has the option for a workday/workweek of four (4) ten (10) hour days (4-10's) provided:

- The project must be for a minimum of four (4) consecutive days.
- Starting time may be within one (1) hour either side of 8:00 a.m.
- Work week must begin on either a Monday or Tuesday: If a holiday falls within that week it shall be a consecutive work day. (Alternate: If a holiday falls in the middle of a week, then the regular eight (8) hour schedule may be implemented).
- Any time worked in excess of any ten (10) hour work day (in a 4-10 hour work week) shall be at the appropriate overtime rate.

All work outside of the regular working hours as provided, Monday through Saturday, shall be paid at one & one-half (1½) times the employee's regular rate of pay. All work performed from 12:00 a.m. Sunday through 8:00 a.m. Monday and recognized holidays shall be paid at double (2) the straight time hourly rate of pay. Should employees work in excess of twelve (12) consecutive hours they shall be paid double time (2X) for all time after twelve (12) hours. Shift work performed between the hours of 4:30 p.m. and 12:30 a.m. (second shift) shall receive eight (8) hours pay at the regular hourly rate of pay plus ten (10%) percent for seven and one-half (7½) hours work. Shift work performed between the hours of 12:30 a.m. and 8:00 a.m. (third shift) shall receive eight (8) hours pay at the regular hourly rate of pay plus fifteen (15%) percent for seven (7) hours work. A lunch period of thirty (30) minutes shall be allowed on each shift. All overtime work required after the completion of a regular shift shall be paid at one and one-half (1½) times the shift hourly rate.

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. 40: Means the regular working week shall consist of five (5) consecutive (8) hour days' labor on the job beginning with Monday and ending with Friday of each week. Four (4) 10-hour days may constitute the regular work week. The regular working day shall consist of eight (8) hours labor on the job beginning as early as 7:00 a.m. and ending as late as 5:30 p.m. All full or part time labor performed during such hours shall be recognized as regular working hours and paid for at the regular hourly rate. All hours worked on Saturday and all hours worked in excess of eight (8) hours but not more than twelve (12) hours during the regular working week shall be paid for at time and one-half (1½) the regular hourly rate. All hours worked on Sundays and holidays and all hours worked in excess of twelve (12) hours during the regular working day shall be paid at two (2) times the regular hourly rate. In the event of rain, snow, cold or excessively windy weather on a regular working day, Saturday may be designated as a "make-up" day. Saturday may also be designated as a "make-up" day, for an employee who has missed a day of work for personal or other reasons. Pay for "make-up" days shall be at regular rates.

**AUDRAIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 42: Means eight (8) hours between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. The starting time may be advanced one (1) or two (2) hours. Employees shall have a lunch period of thirty (30) minutes. The Employer may provide a lunch period of one (1) hour, and in that event, the workday shall commence at 8:00 a.m. and end at 5:00 p.m. The workweek shall commence at 8:00 a.m. on Monday and shall end at 4:30 p.m. on Friday (or 5:00 p.m. on Friday if the Employer grants a lunch period of one (1) hour), or as adjusted by starting time change as stated above. All work performed before 8:00 a.m. and after 4:30 p.m. (or 5:00 p.m. where one (1) hour lunch is granted for lunch) or as adjusted by starting time change as stated above or on Saturday, except as herein provided, shall be compensated at one and one-half (1½) times the regular hourly rate of pay for the work performed. All work performed on Sunday and on recognized holidays shall be compensated at double (2) the regular hourly rate of pay for the work performed. 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 (rain or mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. The Employer shall have the option of working five eight (8) hour days or four 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) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer elects to work four (4) ten (10) hour days in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer is working ten (10) hour days and loses a day due to inclement weather, they may work ten (10) hours Friday at straight time. All hours worked over the forty (40) hours Monday through Friday will be paid at time and one-half (1½) overtime rate. Overtime shall be computed at half-hour intervals. **Shift Work:** Two (2) or three (3) shifts shall be permitted, provided such shifts are scheduled for a minimum of three (3) consecutive days. The second shift shall begin at 4:30 p.m. and end at 12:30 a.m. with one-half (1/2) hour for lunch between 7:30 p.m. and 9:00 p.m. and shall received eighty (8) hours' pay. The third shift shall begin at 12:30 a.m. and end at 8:00 a.m. with one-half (1/2) hour for lunch between 3:30 a.m. and 5:00 a.m. and shall received (8) hours' pay. There shall be at least one (1) foreman on each shift on jobs where more than one shift is employed, provided that there are two (2) or more employees on second and on the third shifts. All shifts shall arrange to interchange working hours at the end of each week. When three shifts are used, the applicable rate must be paid from Saturday at 8:00 a.m. until the following Monday at 8:00 a.m. When three shifts are employed, the second and third shifts shall contain at least one-half (1/2) as many employees as the first shift.

NO. 57: 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. The above may be changed by mutual consent of authorized personnel. When circumstances warrant, the Employer may change the regular workweek to four (4) ten-hour days at the regular time rate of pay. It being understood that all other pertinent information must be adjusted accordingly. All time worked before and after the established workday of eight (8) hours, Monday through Friday, 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.

NO. 59: Means that except as herein provided, eight (8) hours a day shall constitute a standard work day, and forty (40) hours per week shall constitute a week's work. All time worked outside of the standard eight (8) hour work day and on Saturday shall be classified as overtime and paid the rate of time and one-half (1½). All time worked on Sunday and holidays shall be classified as overtime and paid at the rate of double (2) time. The Employer has the option of working either five (5) eight hour days or four (4) ten hour days to constitute a normal forty (40) hour work week. When the four (4) ten-hour work week is in effect, the standard work day shall be consecutive ten (10) hour periods between the hours of 6:30 a.m. and 6:30 p.m. Forty (40) hours per week shall constitute a week's work, Monday through Thursday, inclusive. In the event the job is down for any reason beyond the Employer's control, then Friday and/or Saturday may, at the option of the Employer, be worked as a make-up day; straight time not to exceed ten (10) hours or forty (40) hours per week. When the five day eight (8) hour work week is in effect, forty (40) hours per week shall constitute a week's work, Monday through Friday, inclusive. In the event the job is down for any reason beyond the Employer's control, then Saturday may, at the option of the Employer, be worked as a make-up day; straight time not to exceed eight (8) hours or forty (40) hours per week. The regular starting time (and resulting quitting time) may be moved to 6:00 a.m. or delayed to 9:00 a.m. Make-up days shall not be utilized for days lost due to holidays.

**AUDRAIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 60: Means 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 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 wage rate plus fringe benefits Monday through Friday. **SATURDAY MAKE-UP DAY:** If an Employer is prevented from working forty (40) hours, Monday through Friday, or any part thereof by reason of inclement weather (rain or mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. It is agreed by the parties that the make-up day is not to be used to make up time lost due to recognized holidays. If an Employer elects to work four 10-hour days, between the hours of 6:30 a.m. and 6:30 p.m. in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one half (1½) the hourly wage rate plus fringe benefits Monday through Friday. If an Employer is working 10-hour days and loses a day due to inclement weather, the Employer may work ten (10) hours on Friday at straight time. All hours worked over the forty (40) hours Monday through Friday will be paid at time and one-half (1½) the hourly wage rate plus fringe benefits. All Millwright work performed in excess of the regular work day and on Saturday shall be compensated for at time and one-half (1½) the regular Millwright hourly wage rate plus fringe benefits. The regular work day starting at 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one (1) hour to 9:00 a.m. All work accomplished on Sundays and recognized holidays, or days observed as recognized holidays, shall be compensated for at double (2) the regular hourly rate of wages plus fringe benefits. **NOTE:** All overtime is computed on the hourly wage rate plus an amount equal to the fringe benefits.

NO. 86: Means the regular work week shall consist of five (5) days, Monday through Friday, beginning at 8:00 a.m. and ending at 4:30 p.m. The regular work day beginning time may be advanced one or two hours or delayed by one hour. However, 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 from Monday through Thursday and is stopped due to circumstances beyond his control, inclement weather or holiday, he shall have the option to work Friday at the straight time rate of pay to complete his forty (40) hours. If an employee declines to work Friday as a make-up day, he shall not be penalized. All overtime work performed on Monday through Saturday shall be paid at time and one-half (1½) of 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.

NO. 91: Means eight (8) hours shall constitute a day's work commencing at 8:00 a.m. and ending at 4:30 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 \$2.00 per hour premium for seven and one-half (7½) hours work. Third shift will be for eight (8) hours regular time pay plus \$2.50 per hour premium for seven (7) hour 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.

**AUDRAIN COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 94: Means eight (8) hours shall constitute a day's work between the hours of 8:00 a.m. and 5:00 p.m. The regular workday starting time of 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one (1) hour to 9:00 a.m. All work performed in excess of the regular work day and on Saturday shall be compensated at one and one-half (1½) times the regular pay. In the event time is lost during the work week due to weather conditions, the Employer may schedule work on the following Saturday at straight time. All work accomplished on Sunday and holidays shall be compensated at double the regular rate of wages.

NO. 110: Means eight (8) hours between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. The starting time may be advanced one (1) or two (2) hours. Employees shall have a lunch period of thirty (30) minutes. The Employer may provide a lunch period of one (1) hour, and in that event, the workday shall commence at 8:00 a.m. and end at 5:00 p.m. The workweek shall commence at 8:00 a.m. on Monday and shall end at 4:30 p.m. on Friday (or 5:00 p.m. on Friday if the Employer grants a lunch period of one (1) hour), or as adjusted by starting time change as stated above. All work performed before 8:00 a.m. and after 4:30 p.m. (or 5:00 p.m. where one (1) hour lunch is granted for lunch) or as adjusted by starting time change as stated above or on Saturday, except as herein provided, shall be compensated at one and one-half (1½) times the regular hourly rate of pay for the work performed. All work performed on Sunday and on recognized holidays shall be compensated at double (2) the regular hourly rate of pay for the work performed. 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 (rain or mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. The Employer shall have the option of working five eight (8) hour days or four 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) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer elects to work four (4) ten (10) hour days in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer is working ten (10) hour days and loses a day due to inclement weather, they may work ten (10) hours Friday at straight time. All hours worked over the forty (40) hours Monday through Friday will be paid at time and one-half (1½) overtime rate. Overtime shall be computed at half-hour intervals. **Shift work:** Where it is necessary for the project to operate in shifts, a twenty-four (24) hour or sixteen (16) hour daily schedule shall be established for not less than three (3) consecutive days at the wage rates applicable to the work being performed. One-half (1/2) hour in eight (8) hour shift shall be allowed for lunch for which there will be no deduction in the pay of the employee. Employees on the second shift shall be paid twenty-five cents (\$.25) per hour more and employees on the third shift fifty cents (\$.50) per hour more than those on the first shift. Overtime shall be computed after shift differential is added to base pay.

NO. 122: Means forty (40) hours between Monday and Friday shall constitute the normal work week. Work shall be scheduled between the hours of 6:00 a.m. and 6:30 p.m., with one-half hour for lunch. Work in excess of eight (8) hours per day and forty (40) hours per week, and on Saturdays, shall be paid at the rate of one and one-half times the normal rate. Due to inclement weather during the week, Saturday shall be a voluntary make up day.

NO. 124: Means eight (8) hours shall constitute a day's work on all classes of work between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. The pay for time worked during these hours shall be at the regular wage rate. The regular workweek shall be Monday through Friday. Employment from 4:30 p.m. to 12:00 midnight, Monday through Friday, shall be paid for at one and one-half (1½) times the regular hourly rate. From 12:00 midnight until 8:00 a.m. on any day shall be paid for at twice the regular hourly rate. All time worked on Sundays and the recognized holidays shall be paid at the rate of double (2) time. It is understood that forty (40) hours shall constitute a regular workweek, (5-8's) Sunday Midnight through Friday Midnight, understanding anything over eight (8) hours is one and one-half (1½) times the hourly wage rate.

**AUDRAIN COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

NO. 3: All work done on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day (November 11), Thanksgiving Day, and Christmas Day 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 work shall be performed on the days set forth except in cases of emergencies to protect life or property.

NO. 4: All work done on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas Day shall be paid at the double time rate of pay. If any of the above holidays fall on Sunday, Monday will be observed as the recognized holiday. If any of the above holidays fall on Saturday, Friday will be observed as the recognized holiday.

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. 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 this eight (8) hours is too 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. 15: All work accomplished on the recognized holidays of New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, or days observed as these named holidays, shall be compensated for at double (2) the regular hourly rate of wages plus fringe benefits. If a holiday falls on Saturday, it shall be observed on the preceding Friday. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day, Christmas Day, Decoration Day or Independence Day except to preserve life or property.

NO. 19: All work done on New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day shall be paid at the double time rate of pay. The employee may take off Friday following Thanksgiving Day. However, the employee shall notify his or her Foreman, General Foreman or Superintendent on the Wednesday preceding Thanksgiving Day. When one of the above holidays falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double (2) time rate. When one of the holidays falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double (2) time rate.

NO. 23: All work done on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day and Sundays shall be recognized holidays and shall be paid at the double time rate of pay. When a holiday falls on Sunday, the following Monday shall be considered a holiday.

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.

**AUDRAIN COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

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. 44: All work done on New Year's Day, Memorial Day, Independence Day, Veteran's Day, Thanksgiving Day, and Christmas Day shall be paid at the double time rate of pay. If a holiday falls on a Sunday, it shall be observed on the Monday following. If a holiday falls on a Saturday, it shall be observed on the proceeding Friday. No work shall be performed on these days except in emergency to protect life or property. All work performed on these holidays shall be compensated at double the regular hourly rate for the work performed. Overtime shall be computed at half-hour intervals.

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.

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, Decoration 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 will also be holidays, but if the employer chooses to work these days, the employee will be paid at straight -time rate of pay. If a holiday falls on a Sunday in a particular year, the holiday will be observed on the following Monday.

NO. 74: All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) time of the hourly rate of pay. In the event one of the above holiday's falls on Saturday, the holiday shall be celebrated on Saturday. If the holiday falls on Sunday, the holiday will be celebrated on Monday.

NO. 76: Work performed on Holidays shall be paid at the rate of two times the normal rate. Holidays are: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day. If a holiday falls on a Sunday, it shall be celebrated on the following Monday, if it falls on Saturday, it shall be celebrated on the preceding Friday.

Heavy Construction Rates for
AUDRAIN County

Section 004

OCCUPATIONAL TITLE	*Effective Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
CARPENTER					
Journeyman		\$28.57	7	16	\$11.00
Millwright		\$28.57	7	16	\$11.00
Pile Driver Worker		\$28.57	7	16	\$11.00
OPERATING ENGINEER					
Group I		\$25.00	21	5	\$18.28
Group II		\$24.65	21	5	\$18.28
Group III		\$24.45	21	5	\$18.28
Group IV		\$20.80	21	5	\$18.28
Oiler-Driver		\$20.80	21	5	\$18.28
LABORER					
General Laborer		\$24.56	2	4	\$9.29
Skilled Laborer		\$25.16	2	4	\$9.29
TRUCK DRIVER-TEAMSTER					
Group I		\$26.265	25	21	\$8.65
Group II		\$26.425	25	21	\$8.65
Group III		\$26.415	25	21	\$8.65
Group IV		\$26.535	25	21	\$8.65

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.

**REPLACEMENT PAGE
AUDRAIN COUNTY
OVERTIME SCHEDULE – HEAVY CONSTRUCTION**

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. 7: Means the regular work week shall start on Monday and end on Friday, except where the Employer elects to work Monday through Thursday, ten (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 work day 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). Make-up days shall not be utilized for days lost due to holidays. 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.

**REPLACEMENT PAGE
AUDRAIN COUNTY
OVERTIME SCHEDULE – HEAVY CONSTRUCTION**

NO. 21: 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. However, the project starting time may be advanced or delayed at the discretion of the Employer. At the discretion of the Employer, when working a five (5) day eight (8) hour schedule, Saturday may be used for a make-up day. If an Employer is prohibited from working on a holiday, that employer may work the following Saturday at the straight time rate. However, the Employer may have the option to schedule his work 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 circumstances beyond his control, he shall have the option to work Friday or Saturday at the straight time rate of pay to complete his forty (40) hours. If an Employer is prohibited from working on a holiday, that Employer may work the following Friday or Saturday at the straight time rate. Overtime will be at one and one-half (1½) times the regular rate. 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.

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.

**AUDRAIN COUNTY
HOLIDAY SCHEDULE – HEAVY CONSTRUCTION**

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. 5: 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 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 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 a forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. If workmen are required to work the above recognized holidays or days observed as such, or Sundays, they shall receive double (2) the regular rate of pay for such work. The above shall apply to the four 10's Monday through Friday work week. The ten (10) hours shall be applied to the forty (40) hour work week.

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.

OUTSIDE ELECTRICIAN

These rates are to be used for the following counties:

Adair, Audrain, Boone, Callaway, Camden, Carter, Chariton, Clark, Cole, Cooper, Crawford, Dent, Franklin, Gasconade, Howard, Howell, Iron, Jefferson, Knox, Lewis, Lincoln, Linn, Macon, Maries, Marion, Miller, Moniteau, Monroe, Montgomery, Morgan, Oregon, Osage, Perry, Phelps, Pike, Pulaski, Putnam, Ralls, Randolph, Reynolds, Ripley, St. Charles, St. Francois, St. Louis City, St. Louis County, Ste. Genevieve, Schuyler, Scotland, Shannon, Shelby, Sullivan, Texas, Warren, and Washington.

COMMERCIAL WORK

Occupational Title	Basic Hourly Rate	Total Fringe Benefits
Journeyman Lineman	\$35.03	\$4.75 + 42%
Lineman Operator	\$30.24	\$4.75 + 42%
Groundman	\$23.38	\$4.75 + 42%

OVERTIME RATE: 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.

HOLIDAY RATE: 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.

UTILITY WORK

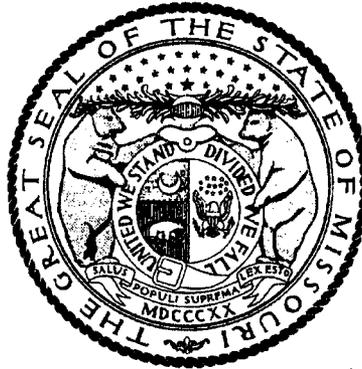
Occupational Title	Basic Hourly Rate	Total Fringe Benefits
Journeyman Lineman	\$35.03	\$4.75 + 39.55%
Lineman Operator	\$30.24	\$4.75 + 39.55%
Groundman	\$23.38	\$4.75 + 39.55%

OVERTIME RATE: 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.

HOLIDAY RATE: 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.

Missouri Division of Labor Standards

WAGE AND HOUR SECTION



JEREMIAH W. (JAY) NIXON, Governor

Annual Wage Order No. 17

Section 106
SHELBY 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

Carla Buschjost, Director
Division of Labor Standards

This Is A True And Accurate Copy Which Was Filed With The Secretary of State: **March 10, 2010**

Last Date Objections May Be Filed: **April 9, 2010**

Prepared by Missouri Department of Labor and Industrial Relations

Building Construction Rates for
SHELBY County

Section 106

OCCUPATIONAL TITLE	**Effective Date of Increase	*	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Asbestos Worker			\$15.00	FED		\$1.46
Boilermaker			\$32.30	57	7	\$20.01
Bricklayers-Stone Mason			\$27.48	59	7	\$13.60
Carpenter			\$23.29	60	15	\$11.00
Cement Mason			\$25.08	9	3	\$11.60
Electrician (Inside Wireman)			\$28.16	69	75	\$4.85 + 35%
Communication Technician			USE ELECTRICIAN (INSIDE WIREMAN) RATE			
Elevator Constructor		a	\$40.945	26	54	\$21.505
Operating Engineer						
Group I			\$25.92	86	66	\$18.37
Group II			\$25.92	86	66	\$18.37
Group III			\$24.67	86	66	\$18.37
Group III-A			\$25.92	86	66	\$18.37
Group IV			\$23.69	86	66	\$18.37
Group V			\$26.62	86	66	\$18.37
Pipe Fitter		b	\$34.00	91	69	\$21.43
Glazier		c	\$24.35	122	76	\$14.22 + 3.4%
Laborer (Building):						
General			\$20.31	42	44	\$9.94
First Semi-Skilled			\$22.31	42	44	\$9.94
Second Semi-Skilled			\$21.31	42	44	\$9.94
Lather			USE CARPENTER RATE			
Linoleum Layer & Cutter			USE CARPENTER RATE			
Marble Mason			\$20.62	124	74	\$12.03
Millwright			\$24.29	60	15	\$11.00
Iron Worker			\$23.70	53	10	\$14.31
Painter			\$21.40	18	7	\$9.82
Plasterer			\$23.89	94	5	\$11.27
Plumber		b	\$34.00	91	69	\$21.43
Pile Driver			\$24.29	60	15	\$11.00
Roofer			\$28.65	15	73	\$14.50
Sheet Metal Worker			\$34.82	32	25	\$19.71
Sprinkler Fitter			\$30.84	33	19	\$15.80
Terrazzo Worker			\$27.48	124	74	\$13.60
Tile Setter			\$20.62	124	74	\$12.03
Truck Driver-Teamster						
Group I		d	\$26.265	35	36	\$8.65
Group II		d	\$26.425	35	36	\$8.65
Group III		d	\$26.415	35	36	\$8.65
Group IV		d	\$26.535	35	36	\$8.65
Traffic Control Service Driver			\$26.415	22	55	\$9.045
Welders-Acetylene & Electric		*				

Fringe Benefit Percentage is of the Basic Hourly Rate

Attention Workers: If you are not being paid the appropriate wage rate and fringe benefits contact the Division of Labor Standards at (573) 751-3403.

**SHELBY COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

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. 9: Means the regular workday starting time of 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one hour to 9:00 a.m. All work performed in excess of the regular work day and on Saturday shall be compensated at one and one-half (1½) times the regular pay. In the event time is lost during the work week due to weather conditions, the Employer may schedule work on the following Saturday at straight time. All work accomplished on Sunday and holidays shall be compensated for at double the regular rate of wages. The work week shall be Monday through Friday, except for midweek 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. 18: Means the regular work day shall be eight (8) hours. Working hours are from six (6) hours before Noon (12:00) to six (6) hours after Noon (12:00). The regular work week shall be forty (40) hours, beginning between 6:00 a.m. and 12:00 Noon on Monday and ending between 1:00 p.m. and 6:00 p.m. on Friday. Saturday will be paid at time and one-half (1½). Sunday and Holidays shall be paid at double (2) time. Saturday can be a make-up day if the weather has forced a day off, but only in the week of the day being lost. Any time before six (6) hours before Noon or six (6) hours after Noon will be paid at time and one-half (1½).

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.

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.

**SHELBY COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 32: The regular working day shall consist of seven and one-half (7½) hours of labor on the job between eight (8) a.m. and four (4) p.m. and the regular working week shall consist of five (5) consecutive seven and one-half (7½) hour day's of labor on the job beginning with Monday and ending with Friday of each week. The normal work week is 37½ 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 shall be paid at time and one-half (1-1/2).** 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. And, a flexible starting time as early as 7:00 a.m. may be implemented when mutually agreed upon by the interested parties. An early starting time of 6:00 a.m. may be used during summer months to avoid excessive afternoon temperatures. This early starting time to be used when 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 7½ hours would be at 115% of the basic wage rate. Overtime Monday through Friday would be at 1 ½ of base shift rate. Saturday first 7 ½ hours of work – 1½ of base shift rate. Saturday – work after 7½ 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.

**SHELBY COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 42: Means eight (8) hours between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. The starting time may be advanced one (1) or two (2) hours. Employees shall have a lunch period of thirty (30) minutes. The Employer may provide a lunch period of one (1) hour, and in that event, the workday shall commence at 8:00 a.m. and end at 5:00 p.m. The workweek shall commence at 8:00 a.m. on Monday and shall end at 4:30 p.m. on Friday (or 5:00 p.m. on Friday if the Employer grants a lunch period of one (1) hour), or as adjusted by starting time change as stated above. All work performed before 8:00 a.m. and after 4:30 p.m. (or 5:00 p.m. where one (1) hour lunch is granted for lunch) or as adjusted by starting time change as stated above or on Saturday, except as herein provided, shall be compensated at one and one-half ($1\frac{1}{2}$) times the regular hourly rate of pay for the work performed. All work performed on Sunday and on recognized holidays shall be compensated at double (2) the regular hourly rate of pay for the work performed. 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 (rain or mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. The Employer shall have the option of working five eight (8) hour days or four 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) hours per week shall be paid at time and one-half ($1\frac{1}{2}$) the hourly rate Monday through Friday. If an Employer elects to work four (4) ten (10) hour days in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one-half ($1\frac{1}{2}$) the hourly rate Monday through Friday. If an Employer is working ten (10) hour days and loses a day due to inclement weather, they may work ten (10) hours Friday at straight time. All hours worked over the forty (40) hours Monday through Friday will be paid at time and one-half ($1\frac{1}{2}$) overtime rate. Overtime shall be computed at half-hour intervals. **Shift Work:** Two (2) or three (3) shifts shall be permitted, provided such shifts are scheduled for a minimum of three (3) consecutive days. The second shift shall begin at 4:30 p.m. and end at 12:30 a.m. with one-half ($1/2$) hour for lunch between 7:30 p.m. and 9:00 p.m. and shall received eighty (8) hours' pay. The third shift shall begin at 12:30 a.m. and end at 8:00 a.m. with one-half ($1/2$) hour for lunch between 3:30 a.m. and 5:00 a.m. and shall received (8) hour's; pay. There shall be at least one (1) foreman on each shift on jobs where more than one shift is employed, provided that there are two (2) or more employees on second and on the third shifts. All shifts shall arrange to interchange working hours at the end of each week. When three shifts are used, the applicable rate must be paid from Saturday at 8:00 a.m. until the following Monday at 8:00 a.m. When three shifts are employed, the second and third shifts shall contain at least one-half ($1/2$) as many employees as the first shift.

NO. 53: Means a normal work week shall be Monday through Friday. Normal hours of work shall consist of eight and one-half ($8\frac{1}{2}$) consecutive hours per workday between 7:00 a.m. and 5:00 p.m., which includes one-half ($1/2$) hour for lunch. A 4-10 hour day work week Monday through Thursday or Tuesday through Friday may be worked at the contractor's request. Days must be consecutive. Time and one-half ($1\frac{1}{2}$) shall be paid for the first two (2) hours of overtime on any regular work day, Monday through Friday, and any work performed before regular starting time and after regular quitting time. Saturday work shall be paid at one and one-half ($1\frac{1}{2}$) times the regular rate of pay for the first ten (10) hours. All other overtime will remain as double (2) time, including Sundays and recognized holidays.

NO. 57: 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. The above may be changed by mutual consent of authorized personnel. When circumstances warrant, the Employer may change the regular workweek to four (4) ten-hour days at the regular time rate of pay. It being understood that all other pertinent information must be adjusted accordingly. All time worked before and after the established workday of eight (8) hours, Monday through Friday, all time worked on Saturday, shall be paid at the rate of time and one-half ($1\frac{1}{2}$) 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.

**SHELBY COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 59: Means that except as herein provided, eight (8) hours a day shall constitute a standard work day, and forty (40) hours per week shall constitute a week's work. All time worked outside of the standard eight (8) hour work day and on Saturday shall be classified as overtime and paid the rate of time and one-half (1½). All time worked on Sunday and holidays shall be classified as overtime and paid at the rate of double (2) time. The Employer has the option of working either five (5) eight hour days or four (4) ten hour days to constitute a normal forty (40) hour work week. When the four (4) ten-hour work week is in effect, the standard work day shall be consecutive ten (10) hour periods between the hours of 6:30 a.m. and 6:30 p.m. Forty (40) hours per week shall constitute a week's work, Monday through Thursday, inclusive. In the event the job is down for any reason beyond the Employer's control, then Friday and/or Saturday may, at the option of the Employer, be worked as a make-up day; straight time not to exceed ten (10) hours or forty (40) hours per week. When the five day eight (8) hour work week is in effect, forty (40) hours per week shall constitute a week's work, Monday through Friday, inclusive. In the event the job is down for any reason beyond the Employer's control, then Saturday may, at the option of the Employer, be worked as a make-up day; straight time not to exceed eight (8) hours or forty (40) hours per week. The regular starting time (and resulting quitting time) may be moved to 6:00 a.m. or delayed to 9:00 a.m. Make-up days shall not be utilized for days lost due to holidays.

NO. 60: Means 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 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 wage rate plus fringe benefits Monday through Friday. **SATURDAY MAKE-UP DAY:** If an Employer is prevented from working forty (40) hours, Monday through Friday, or any part thereof by reason of inclement weather (rain or mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. It is agreed by the parties that the make-up day is not to be used to make up time lost due to recognized holidays. If an Employer elects to work four 10-hour days, between the hours of 6:30 a.m. and 6:30 p.m. in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one half (1½) the hourly wage rate plus fringe benefits Monday through Friday. If an Employer is working 10-hour days and loses a day due to inclement weather, the Employer may work ten (10) hours on Friday at straight time. All hours worked over the forty (40) hours Monday through Friday will be paid at time and one-half (1½) the hourly wage rate plus fringe benefits. All Millwright work performed in excess of the regular work day and on Saturday shall be compensated for at time and one-half (1½) the regular Millwright hourly wage rate plus fringe benefits. The regular work day starting at 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one (1) hour to 9:00 a.m. All work accomplished on Sundays and recognized holidays, or days observed as recognized holidays, shall be compensated for at double (2) the regular hourly rate of wages plus fringe benefits. **NOTE:** All overtime is computed on the hourly wage rate plus an amount equal to the fringe benefits.

NO. 69: Means eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m., except for a thirty (30) minute lunch period shall constitute a regular work day. Forty (40) hours, within five (5) such work days-Monday through Friday, inclusive, shall constitute a regular work week. The starting and quitting time for each job shall be subject to variance by mutual Agreement and where not agreed otherwise the regular starting time shall be 8:00 a.m. and the quitting time shall be 4:30 p.m. In order to meet job site or owner conditions, the above section may be modified to allow for a workday/workweek of four (4), ten-hour days (4-10's) provided that the following condition is met:

-The project must be for a minimum of four (4) consecutive days, beginning on either a Monday or Tuesday, holidays, inclusive.

All work performed outside of the regularly scheduled working hours, Monday through Friday, and on Saturday shall be paid at one and one-half (1½) times the hourly rate. On all work performed on Sundays and recognized legal holidays or days that may be celebrated as such, shall be paid at double (2) the hourly rate. Shift work performed between the hours of 4:30 p.m. and 12:30 a.m. (second shift) shall be paid at eight (8) hours pay at the regular hourly rate plus ten (10%) percent for seven and one-half (7½) hours work. Shift work performed between the hours of 12:30 a.m. and 8:00 a.m. (third shift) shall be paid at eight (8) hours pay at the regular hourly rate plus fifteen (15%) percent for seven (7) hours work. A lunch period of thirty (30) minutes shall be allowed on each shift. All overtime work required after the completion of a regular shift shall be paid at one and one-half (1½) times the shift hourly rate.

**SHELBY COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 86: Means the regular work week shall consist of five (5) days, Monday through Friday, beginning at 8:00 a.m. and ending at 4:30 p.m. The regular work day beginning time may be advanced one or two hours or delayed by one hour. However, 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 from Monday through Thursday and is stopped due to circumstances beyond his control, inclement weather or holiday, he shall have the option to work Friday at the straight time rate of pay to complete his forty (40) hours. If an employee declines to work Friday as a make-up day, he shall not be penalized. All overtime work performed on Monday through Saturday shall be paid at time and one-half (1½) of 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.

NO. 91: Means eight (8) hours shall constitute a day's work commencing at 8:00 a.m. and ending at 4:30 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 \$2.00 per hour premium for seven and one-half (7½) hours work. Third shift will be for eight (8) hours regular time pay plus \$2.50 per hour premium for seven (7) hour work.

NO. 94: Means eight (8) hours shall constitute a day's work between the hours of 8:00 a.m. and 5:00 p.m. The regular workday starting time of 8:00 a.m. (and resulting quitting time of 4:30 p.m.) may be moved forward to 6:00 a.m. or delayed one (1) hour to 9:00 a.m. All work performed in excess of the regular work day and on Saturday shall be compensated at one and one-half (1½) times the regular pay. In the event time is lost during the work week due to weather conditions, the Employer may schedule work on the following Saturday at straight time. All work accomplished on Sunday and holidays shall be compensated at double the regular rate of wages.

**SHELBY COUNTY
OVERTIME SCHEDULE - BUILDING CONSTRUCTION**

NO. 110: Means eight (8) hours between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. The starting time may be advanced one (1) or two (2) hours. Employees shall have a lunch period of thirty (30) minutes. The Employer may provide a lunch period of one (1) hour, and in that event, the workday shall commence at 8:00 a.m. and end at 5:00 p.m. The workweek shall commence at 8:00 a.m. on Monday and shall end at 4:30 p.m. on Friday (or 5:00 p.m. on Friday if the Employer grants a lunch period of one (1) hour), or as adjusted by starting time change as stated above. All work performed before 8:00 a.m. and after 4:30 p.m. (or 5:00 p.m. where one (1) hour lunch is granted for lunch) or as adjusted by starting time change as stated above or on Saturday, except as herein provided, shall be compensated at one and one-half (1½) times the regular hourly rate of pay for the work performed. All work performed on Sunday and on recognized holidays shall be compensated at double (2) the regular hourly rate of pay for the work performed. 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 (rain or mud), Saturday or any part thereof may be worked as a make-up day at the straight time rate. The Employer shall have the option of working five eight (8) hour days or four 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) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer elects to work four (4) ten (10) hour days in any week, work performed more than ten (10) hours per day or forty (40) hours per week shall be paid at time and one-half (1½) the hourly rate Monday through Friday. If an Employer is working ten (10) hour days and loses a day due to inclement weather, they may work ten (10) hours Friday at straight time. All hours worked over the forty (40) hours Monday through Friday will be paid at time and one-half (1½) overtime rate. Overtime shall be computed at half-hour intervals. **Shift work:** Where it is necessary for the project to operate in shifts, a twenty-four (24) hour or sixteen (16) hour daily schedule shall be established for not less than three (3) consecutive days at the wage rates applicable to the work being performed. One-half (1/2) hour in eight (8) hour shift shall be allowed for lunch for which there will be no deduction in the pay of the employee. Employees on the second shift shall be paid twenty-five cents (\$.25) per hour more and employees on the third shift fifty cents (\$.50) per hour more than those on the first shift. Overtime shall be computed after shift differential is added to base pay.

NO. 122: Means forty (40) hours between Monday and Friday shall constitute the normal work week. Work shall be scheduled between the hours of 6:00 a.m. and 6:30 p.m., with one-half hour for lunch. Work in excess of eight (8) hours per day and forty (40) hours per week, and on Saturdays, shall be paid at the rate of one and one-half times the normal rate. Due to inclement weather during the week, Saturday shall be a voluntary make up day.

NO. 124: Means eight (8) hours shall constitute a day's work on all classes of work between the hours of 6:00 a.m. and 5:30 p.m., Monday through Friday. The pay for time worked during these hours shall be at the regular wage rate. The regular workweek shall be Monday through Friday. Employment from 4:30 p.m. to 12:00 midnight, Monday through Friday, shall be paid for at one and one-half (1½) times the regular hourly rate. From 12:00 midnight until 8:00 a.m. on any day shall be paid for at twice the regular hourly rate. All time worked on Sundays and the recognized holidays shall be paid at the rate of double (2) time. It is understood that forty (40) hours shall constitute a regular workweek, (5-8's) Sunday Midnight through Friday Midnight, understanding anything over eight (8) hours is one and one-half (1½) times the hourly wage rate.

**SHELBY COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

NO. 3: All work done on New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day (November 11), Thanksgiving Day, and Christmas Day 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 work shall be performed on the days set forth except in cases of emergencies to protect life or property.

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. 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 too 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. 10: All work done on New Year's Day, Memorial Day, Independence Day, Veteran's Day, Thanksgiving Day, the day after Thanksgiving and Christmas Day shall be paid at the double (2) time rate of pay. Any holiday which occurs on a Sunday shall be observed the following Monday. No work shall be performed on LABOR DAY except to save life and property.

NO. 15: All work accomplished on the recognized holidays of New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, or days observed as these named holidays, shall be compensated for at double (2) the regular hourly rate of wages plus fringe benefits. If a holiday falls on Saturday, it shall be observed on the preceding Friday. If a holiday falls on a Sunday, it shall be observed on the following Monday. No work shall be performed on Labor Day, Christmas Day, Decoration Day or Independence Day except to preserve life or property.

NO. 19: All work done on New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day, and Christmas Day shall be paid at the double time rate of pay. The employee may take off Friday following Thanksgiving Day. However, the employee shall notify his or her Foreman, General Foreman or Superintendent on the Wednesday preceding Thanksgiving Day. When one of the above holidays falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double (2) time rate. When one of the holidays falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double (2) 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. 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.

**SHELBY COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

NO. 44: All work done on New Year's Day, Memorial Day, Independence Day, Veteran's Day, Thanksgiving Day, and Christmas Day shall be paid at the double time rate of pay. If a holiday falls on a Sunday, it shall be observed on the Monday following. If a holiday falls on a Saturday, it shall be observed on the preceding Friday. No work shall be performed on these days except in emergency to protect life or property. All work performed on these holidays shall be compensated at double the regular hourly rate for the work performed. Overtime shall be computed at half-hour intervals.

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.

NO. 56: All work done on New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), November 11 (which shall be recognized as Veterans' Day), Thanksgiving Day, The Friday after Thanksgiving Day, and Christmas Day shall be compensated at the double (2) time rate of pay. When an observed holiday falls on Sunday, the following Monday shall be observed as the holiday. No work shall be performed on Labor Day except in cases of emergency, and then only when triple (3) time is paid.

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, Decoration 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 will also be holidays, but if the employer chooses to work these days, the employee will be paid at straight -time rate of pay. If a holiday falls on a Sunday in a particular year, the holiday will be observed on the following Monday.

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.

NO. 74: All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day, shall be paid at double (2) time of the hourly rate of pay. In the event one of the above holiday's falls on Saturday, the holiday shall be celebrated on Saturday. If the holiday falls on Sunday, the holiday will be celebrated on Monday.

**SHELBY COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

NO. 75: Means that on all work performed on Sundays and the following legal holidays or days that may be celebrated as such, shall be paid at double (2) the hourly rate: New Year's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. Saturday holidays will be celebrated on Saturday. Sunday holidays will be celebrated on Monday following the holiday. Work performed on any of these Mondays will be paid at double (2) the rate of pay. The Friday following Thanksgiving will be worked at the Employer's option. If worked, it will be at the regular hourly rate of pay.

NO. 76: Work performed on Holidays shall be paid at the rate of two times the normal rate. Holidays are: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Day after Thanksgiving, Christmas Day. If a holiday falls on a Sunday, it shall be celebrated on the following Monday, if it falls on Saturday, it shall be celebrated on the preceding Friday.

Heavy Construction Rates for
SHELBY County

Section 106

OCCUPATIONAL TITLE	*Effective Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
CARPENTER					
Journeymen		\$28.57	7	16	\$11.00
Millwright		\$28.57	7	16	\$11.00
Pile Driver Worker		\$28.57	7	16	\$11.00
OPERATING ENGINEER					
Group I		\$25.00	21	5	\$18.28
Group II		\$24.65	21	5	\$18.28
Group III		\$24.45	21	5	\$18.28
Group IV		\$20.80	21	5	\$18.28
Oiler-Driver		\$20.80	21	5	\$18.28
CEMENT MASON					
		\$22.57	13	14	\$16.93
LABORER					
General Laborer		\$24.56	2	4	\$9.29
Skilled Laborer		\$25.16	2	4	\$9.29
TRUCK DRIVER-TEAMSTER					
Group I		\$26.265	25	21	\$8.65
Group II		\$26.425	25	21	\$8.65
Group III		\$26.415	25	21	\$8.65
Group IV		\$26.535	25	21	\$8.65

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.

**REPLACEMENT PAGE
SHELBY COUNTY
OVERTIME SCHEDULE – HEAVY CONSTRUCTION**

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. 7: Means the regular work week shall start on Monday and end on Friday, except where the Employer elects to work Monday through Thursday, ten (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 work day 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). Make-up days shall not be utilized for days lost due to holidays. 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.

REPLACEMENT PAGE
SHELBY COUNTY
OVERTIME SCHEDULE – HEAVY CONSTRUCTION

NO. 13: Means that when working a work day for an eight (8) hour schedule, a maximum of eight (8) hours shall constitute a day's work and shall be between the hours of 6:00 a.m. and 5:00 p.m. excepting work that must be performed according to project owner's specifications; all work necessary previous to or after starting of major crew or machinery, to be performed at the regular rate. Notwithstanding the above, all work done over eight (8) consecutive hours in any one day, lunch excepted, shall be paid at the rate of one and one-half (1½) times the basic rate of pay. The Contractor may choose the option of working four (4) ten (10) hour days (Ten Hour Schedule), Monday through Saturday, at straight time. Overtime is to be paid at the rate of one and one-half (1½) times the basic rate for all hours worked over ten (10) in a day or over forty (40) in a week. Forty (40) hours of work performed Monday through Saturday shall constitute one (1) working week and shall be so recognized. All work done after forty (40) hours in any one week, when a crew has worked forty (40) hours at the basic rate of pay during the same week, shall be paid at the rate of one and one-half (1½) times the basic rate of pay. Saturday is to be worked as a make-up day at the straight time hourly rate of pay (up to forty (40) hours that week) provided, that Friday is worked as the first make-up day (weather permitting). The contractor may elect a starting time from 6:00 a.m. to 8:00 a.m., which shall be the regular starting time. Any work before the regular starting time or after the regular quitting time shall be at one and one-half (1½) times the regular rate of pay.

NO. 21: 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. However, the project starting time may be advanced or delayed at the discretion of the Employer. At the discretion of the Employer, when working a five (5) day eight (8) hour schedule, Saturday may be used for a make-up day. If an Employer is prohibited from working on a holiday, that employer may work the following Saturday at the straight time rate. However, the Employer may have the option to schedule his work 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 circumstances beyond his control, he shall have the option to work Friday or Saturday at the straight time rate of pay to complete his forty (40) hours. If an Employer is prohibited from working on a holiday, that Employer may work the following Friday or Saturday at the straight time rate. Overtime will be at one and one-half (1½) times the regular rate. 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.

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.

**SHELBY COUNTY
HOLIDAY SCHEDULE – HEAVY CONSTRUCTION**

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. 5: 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 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 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 a forty (40) hour week; however, no reimbursement for this eight (8) hours is to be paid the workman unless worked. If workmen are required to work the above recognized holidays or days observed as such, or Sundays, they shall receive double (2) the regular rate of pay for such work. The above shall apply to the four 10's Monday through Friday work week. The ten (10) hours shall be applied to the forty (40) hour work week.

NO. 14: Means work done on Sundays and holidays shall be paid at the double (2) time rate. Holidays recognized shall be as follows: New Years Day, Memorial Day, Fourth of July, Labor Day, Veterans Day (Veterans Day shall be celebrated the day after Thanksgiving Day), Thanksgiving Day and Christmas Day. If a holiday falls on a Sunday, it shall be celebrated on the following Monday. If a holiday falls on a day other than a Sunday, it shall be celebrated on that date. The contractor may shut down the job before or after a 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.

OUTSIDE ELECTRICIAN

These rates are to be used for the following counties:

Adair, Audrain, Boone, Callaway, Camden, Carter, Chariton, Clark, Cole, Cooper, Crawford, Dent, Franklin, Gasconade, Howard, Howell, Iron, Jefferson, Knox, Lewis, Lincoln, Linn, Macon, Maries, Marion, Miller, Moniteau, Monroe, Montgomery, Morgan, Oregon, Osage, Perry, Phelps, Pike, Pulaski, Putnam, Ralls, Randolph, Reynolds, Ripley, St. Charles, St. Francois, St. Louis City, St. Louis County, Ste. Genevieve, Schuyler, Scotland, Shannon, Shelby, Sullivan, Texas, Warren, and Washington.

COMMERCIAL WORK

Occupational Title	Basic	Total
	Hourly	Fringe
	Rate	Benefits
Journeyman Lineman	\$35.03	\$4.75 + 42%
Lineman Operator	\$30.24	\$4.75 + 42%
Groundman	\$23.38	\$4.75 + 42%

OVERTIME RATE: 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.

HOLIDAY RATE: 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.

UTILITY WORK

Occupational Title	Basic	Total
	Hourly	Fringe
	Rate	Benefits
Journeyman Lineman	\$35.03	\$4.75 + 39.55%
Lineman Operator	\$30.24	\$4.75 + 39.55%
Groundman	\$23.38	\$4.75 + 39.55%

OVERTIME RATE: 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.

HOLIDAY RATE: 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.