



**City of Kansas City, Missouri
General Services Department
Earnest Rouse, Director**

- Contract File
- Finance
- Contractor
- Surety
- City Clerk
- Grant Agency
- Project Manager
- CM/Inspector
- Design Professional
- _____

Project Manual

PROJECT NO. 07061111

**BID PACKAGE NO. 6
ADA COMPLIANCE PROJECT
FOR
PARKS DEPARTMENT
COMMUNITY CENTERS**

BIDDER/ADDRESS

Company	BKM-IEC LLC	_____
Contact	Brent Motley	_____
Address	13625 Oak Street	_____
	Kansas City, MO 64145	_____
	Tel 913-832-4393 Fax	_____
Phone	Email bmotlev@bkmconstructionllc.com	_____
Fax	_____	_____
Email	_____	_____

Project Manager: Jenny Harriman
Telephone: 816-513-2526
Email: Jenny.Harriman@kcmo.org

ORDINANCE NO. 150611

Authorizing expenditures for the ADA Facility Improvements projects; estimating revenue and appropriating \$21,922,187.00 in the Series 2015B Bond Fund; authorizing the Director of Finance to close project accounts; declaring intent to reimburse from bond proceeds; and recognizing this ordinance as having an accelerated effective date.

BE IT ORDAINED BY THE COUNCIL OF KANSAS CITY:

Section 1. That the Director of General Services is authorized to execute Contract Amendment No. 07001111 with contractors in the amount of \$21,922,187.00 for construction of scope as outlined in ADA Facility Upgrades Bid Packages No. 5, No. 6, No. 7, No. 9, No. 10, and No. 11. Copies of the contracts are on file in the General Services Department.

Section 2. That the revenue in the following account of Fund No. 3433, the Series 2015B Bond Fund, is hereby estimated in the following amount:

AL-3433-120000-590000	Bond Proceeds	\$21,922,187.00
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Section 3. That the sum of \$21,922,187.00 is hereby appropriated from the Unappropriated Fund Balance of Fund No. 3433, the Series 2015B Bond Fund to the following account:

AL-3433-078027-B-07001111	ADA Facility Improvements	\$21,922,187.00
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Section 4. That the Director of General Services is authorized to execute a Contract No. 07001111 with BKM-TEC Construction in the amount of \$1,340,263.00 for the Construction of scope as outlined in the ADA Facility Upgrades Bid Package No. 8. A copy of this contract is on file in the General Services Department. The Director of General Services Department is hereby authorized to amend Contract No. 07001111 not to exceed \$268,000.00 without further authorization of the City Council.

Section 5. That the Director of General Services is authorized to execute a third amendment to Contract No. 07001111 with Piper Wind Architects in the amount of the amount of \$2,500,000.00 for additional design services related to the ADA Compliance work at various City facilities. Copies of the contracts are on file in the General Services Department.

Section 6. That the Director of Finance is hereby authorized to close project accounts upon project completion and return the unspent portion of the appropriation to the Fund Balance from which it came.

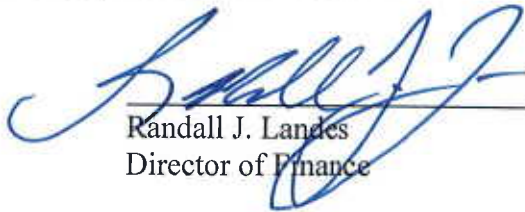
Section 7. That the City hereby declares its official intent to reimburse itself for certain expenditures made within sixty (60) days prior to or on and after the date of this ordinance with respect to the ADA Facility Improvements Project ("Project") with the

ORDINANCE NO. 150611

proceeds of bonds expected to be issued by the City. The maximum principal amount of bonds expected to be issued for the Project is not to exceed \$ 21,922,187.00. This constitutes a declaration of official intent under Treasury Regulation Section 1.150-2.


Section 8. That this ordinance, relating to the design, repair, maintenance or construction of a public improvement, is recognized as an ordinance with an accelerated effective date as provided by Section 503 (a)(3)(D) of the Charter and shall take effect in accordance with Section 503, City Charter.

I hereby certify that there is a balance, otherwise unencumbered, to the credit of the appropriation to which the foregoing expenditure is to be charged, and a cash balance, otherwise unencumbered in the treasury, to the credit of the fund from which payment is to be made, each sufficient to meet the obligation hereby incurred.



Randall J. Landes
Director of Finance

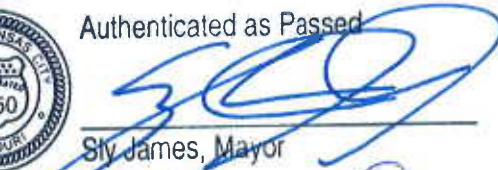
Approved as to form and legality



Nelson V. Munoz
Assistant City Attorney



Authenticated as Passed



St. James, Mayor



Marilyn Sanders, City Clerk

JUL 23 2015

Date Passed



CERTIFICATION PAGE

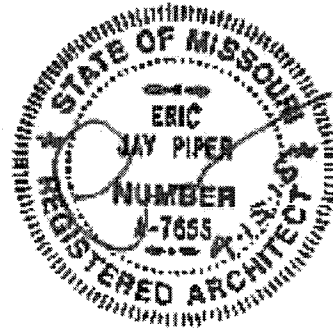
Project Number: 07061111 – Bid Package #6

Project Title: ADA Compliance Project for
Parks Department - Community Centers

I am responsible for the following specifications and drawings: Architectural

Drawings: Sheets G-06-001 thru 003, A-0 thru A-3, A-6A-001 thru 012, A-6B-001 thru 010, A-6C-001 thru 010, A-6D-001 thru 012, A-00-001 thru 002, A-10-001 thru 002, A-20-001 thru 005, A-30-001, A-40-001 thru 003, A-50-001 thru 002, A-60-001 thru 003.

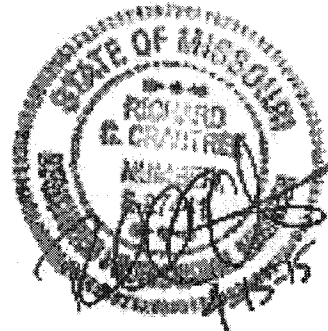
Specifications: Sections 011000, 012500, 012600, 012900, 013100, 013200, 013233, 013300, 017300, 017839, 024119, 033000, 042200, 051200, 055119, 055213, 061053, 062023, 064116, 078413, 079200, 081113, 081416, 087100, 092216, 092900, 093013, 095113, 096513, 096519, 099100, 102119, 102800, 105113



I am responsible for the following specifications and drawings: Structural

Drawings: Sheets S-6A-001, S-10-001 thru 003, S-20-001 thru S-20-002

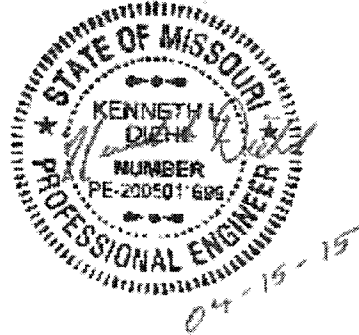
Specifications: Sections 033000, 042200, 051200



I am responsible for the following specifications and drawings: Mechanical, Electrical & Plumbing

Drawings: Sheets P-6A-001 thru P-6A-002, E-6A-001 thru E-6A-002, P-6B-001 thru 005, E-6B-001 thru 002, P-6C-001 thru 002, M-6C-001 thru 002, E-6C-001 thru 002, P-6D-001 thru 005, P-22-001 thru 010, E-26-001 thru 005.

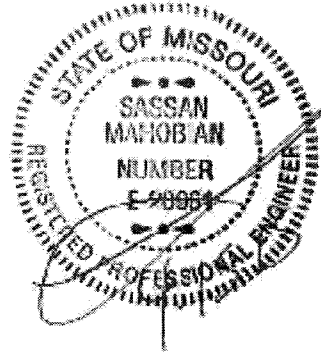
Specifications: Sections 221116, 221316, 224200, 224713, 233713, 260500, 260700, 260750, 261230, 261310, 261380, 261550, 264500



I am responsible for the following specifications and drawings: Civil

Drawings: Sheets C-6B-001 thru 003, C-6C-001 thru 002, C-6D-001, C-10-001 thru 006

Specifications: Sections 321216, 321313



I am responsible for the following specifications and drawings: Fire Protection

Drawings:

Specifications: Section 283100



EACH PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEARS ABOVE ASSUMES RESPONSIBILITY IN THESE BIDDING DOCUMENTS ONLY FOR WHAT IS LISTED ABOVE AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) ANY RESPONSIBILITY FOR ALL OTHER PLANS, SPECIFICATIONS, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE SIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT.



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HILLCREST COMMUNITY CENTER
10401 HILLCREST ROAD, KANSAS CITY MO 64134

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A-6A-005 ENLARGED PLANS
A-6A-006 ENLARGED SECTION
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A-6A-010 PHOTO DETAILS
A-6A-011 DOOR SCHEDULE
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KANSAS CITY NORTH COMMUNITY CENTER
3930 NE ANTIOCH ROAD, KANSAS CITY MO 64117

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TONY AQUIRRE COMMUNITY CENTER
2050 WEST PENNWAY, KANSAS CITY MO 64108

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BRUSH CREEK COMMUNITY CENTER

3801 EMANUEL CLEAVER II BOULEVARD, KANSAS CITY MO 64130

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A-6D-004 ENLARGED PLANS
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A-6D-008 ENLARGED PLAN
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A-40-002 TOILET COMPARTMENTS
A-40-003 TRANSFER SHOWER COMPARTMENT

A-50-001 CABINET DETAILS
A-50-002 SHELF & HANGING ROD DETAIL

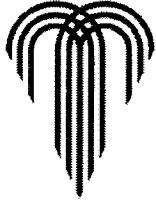
A-60-001 STAIR DETAILS
A-60-002 HANDRAIL DETAILS
A-60-003 RAMP DETAILS

S-10-001 STRUCTURAL DETAILS
S-10-002 STRUCTURAL DETAILS
S-10-003 STRUCTURAL DETAILS
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S-20-002 STRUCTURAL DETAILS

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P-22-005 PLUMBING DETAILS
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P-22-008 PLUMBING DETAILS
P-22-009 PLUMBING DETAILS
P-22-010 PLUMBING DETAILS

E-26-001 ELECTRICAL SYMBOLS AND NOTES
E-26-002 ELECTRICAL DETAILS
E-26-003 ELECTRICAL DETAILS
E-26-004 ELECTRICAL DETAILS
E-26-005 STANDARD DETAILS

END OF SECTION 00015



INVITATION TO BID

Project No.: 07061111

Project Title: Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community Center Facilities

The **General Services Department** of Kansas City, Missouri will receive sealed Bids until 2:00 PM, on **Tuesday, May 19, 2015** at City Hall, 414 East 12th Street, First Floor, Room 102W, Kansas City, Missouri, 64106, for **Project No. 07061111 – Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community Center Facilities.** Bids will be opened after that time at the same location.

City desires that Minority Business Enterprises (MBE) and Women's Business Enterprises (WBE) have a maximum opportunity to participate in the performance of City contracts. The goals for this specific Project are **(15%)** MBE participation and **(7%)** WBE participation.

Bidding Documents will be available online to all interested parties at the Kansas City, Missouri Plan Room, <http://www.kcmoplanroom.org>. All addenda will be posted at this location. Any document or plan may be viewed or downloaded from this location.

City is providing additional facilities information through My Smart Plans at <http://mysmartplans.com//kcmoadabid> as a courtesy to interested parties. However, information provided through My Smart Plans is not part of the Bidding Documents. In the event of conflict between the information provided in my Smart Plans and the Bidding Documents on the Kansas City, Missouri Plan Room, the Bidding Documents shall take precedence.

Bidders are required to attend the **Mandatory**, Pre-Bid Conference at 2:30 PM, April 30, 2015 at City Hall, 414 E 12th St, Kansas City, MO 64106 on the 4th Floor East Conference Room. **Mandatory Tours** of the sites for Bidders inspection are scheduled on May 6, 2015 as follows:

- Kansas City North Community Center, 3930 NE Antioch Rd, Kansas City, MO 64117
Bidders shall gather in the parking lot by 10:15 AM. Inspection ends at 11:00 AM
- Tony Aguirre Community Center, 2050 W Pennway Terr., Kansas City, MO 64108
Bidders shall gather in the parking lot by 11:15 AM. Inspection ends at 12:00 PM
- Brush Creek Community Center, 3801 Emmanuel Clever II Blvd. Kansas City, MO 64130
Bidders shall gather in the parking lot by 2:00 PM. Inspection ends at 2:45 PM
- Hillcrest Community Center, 10401 Hillcrest Rd, Kansas City, MO 64134
Bidders shall gather in the parking lot by 3:00 PM. Inspection ends at 3:45 PM

Forward all questions in writing to the following Project Manager and Contract Administrator.

Jenny T. Harriman
Project Manager
General Services Department
City Hall, 17th Fl
Kansas City, MO 64106
816-513-2526 Phone
816-513-2727 Fax
E-mail: Jenny.Harriman@kcmo.org

George H. Goodale, CPPO, M.P.A.
Contract Administrator
General Services Procurement
1st Floor, Room 102W, City Hall, 414 E. 12th St
Kansas City, MO 64106
816-513-0808 Phone
816-513-2812 Fax
E-mail: George.Goodale@kcmo.org

View all procurement and contracting opportunities at <http://www.kcmo.gov>



INSTRUCTIONS TO BIDDERS

Project No.: 07061111

Project Title: Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community Center Facilities

1. Sealed Bids for **Project No. 07061111 – Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community Center Facilities** will be received by the *General Services Department*, at City Hall, 414 East 12th Street, First Floor, Room 102W, Kansas City, Missouri, 64106, until 2:00 P.M., **Tuesday, May 19, 2015**, at which time bidding will be closed.

- a. City is providing additional facilities information through My Smart Plans at <http://mysmartplans.com/kcmoadabid> as a courtesy to interested parties. However, information provided through My Smart Plans is not part of the Bidding Documents. In the event of conflict between the information provided in my Smart Plans and the Bidding Documents on the Kansas City, Missouri Plan Room, the Bidding Documents shall take precedence.
- b. All Bids will be opened and read aloud. The Bid Envelope must contain all required submissions to be included with the Bid. No Bid may be withdrawn for a period of ninety (90) days after the Bid is opened. Bid security shall likewise continue for the same ninety (90) days unless earlier released by the City. The successful Bidder shall comply with all Bidding and contract requirements. Bids, once opened and read, may not be withdrawn without forfeiture of the Bid security.
- c. All Bids shall be addressed to the **Manager of Contract Administration, Procurement Services**, shall state on the outside of the sealed Bid envelope “Bid Enclosed”, title and Project number, and shall be deposited in the locked Bid box. All Bids must comply with the Bidding Requirements of Kansas City, Missouri (CITY).

2. **Consideration of Bids**

- a. The City will determine the lowest and best Bid. The City may reject any or all bids. If the City rejects all Bids, the City may: (1) resolicit Bids following the City’s normal solicitation procedure; or (2) solicit Bids only from those Bidders that submitted a Bid pursuant to the original solicitation; or (3) use an expedited Bid submission schedule with or without readvertising or issuing any other public notice when the City determines that the delay from the normal City solicitation procedure would not be in the City’s best interests.
- b. **Alternates**. If this solicitation includes Bid Alternates, the City, in its sole discretion, may include any, all or none of the Alternates in determining the lowest and best Bid. In determining lowest and best Bid, the City may include the Alternates in any combination and in any order or priority or choose none of the Alternates. The City may make this determination at any time after Bid Closing and prior to Contract award. The City will act in the best interest of the City in determining whether to include any, all or none of the Alternates and the combination and priority of any Alternates selected. If additional funding becomes available after Contract award, City may add any or all of the Alternates to the Contract by change order.

3. **Evidence of Competency to Perform**. Each bidder shall furnish with the bid satisfactory evidence of Bidder’s competency to perform the proposed work. Such evidence of competency shall consist of the following:

- a. Successful Bidder shall be required to use My Smart Plans related to ADA Project/Program Reporting and protocols included in the software during the term of this Contract. When requested by the City, Bidder shall submit user applications for all applicable personnel and shall require subcontractors/subconsultants to submit same as required. Statement of Bidder's experience with My Smart Plans system.
- b. Provide a list of recent construction projects indicating your understanding with ADA compliance requirements.
- c. Completed Form 00410.01 Experience Reference Summary for similar projects performed within the past 5 years including reference information.
- d. Identify the following Key Personnel proposed for the Project. (**NOTE:** Key Personnel must be committed to the Project for its duration, and may not be removed or substituted without the City's prior written consent.)
 - (1) GC Project Manager
 - (2) On-Site Field Superintendent
 - (3) QC/QA Manager
 - (4) Safety Officer
- e. For each of the Key Personnel, provide the following background information.
 - (1) Years of employment with current employer
 - (2) City of residence
 - (3) Identify any other projects this person will be involved with concurrently with the Project, and state the time commitment for the Project and each other project
 - (4) Discuss professional registrations, education, certifications, and credentials held by this person that are applicable to the Project
- f. Discuss generally the tasks involved in the Project.
- g. Illustrate clearly and concisely Bidder's understanding of the technical elements that must be addressed for successful completion of the Project.
- h. Submit a bid schedule with anticipated milestones for the Project using Microsoft Project 2007 or later format.
- i. Describe key issues that might affect the Project schedule and how Bidder proposes to address them.
- j. Summary of the Project Safety Plan for the Project.
 - (1) Describe how Bidder proposes to address any unique safety issues for the Project
 - (2) Describe your safety record and environmental compliance record along with your Firm's OSHA reportable accident rates on recent comparable size projects
 - (3) Statement of Bidder's Experience Modification Ratio (EMR)
- k. Discuss Bidder's understanding of the traffic control required for the Project, if applicable, and how traffic control will impact the Project schedule. Discuss any major traffic control issues that need to be addressed and Bidder's proposed solutions.
- l. Identify any other special issues or problems that are likely to be encountered. Outline the manner in which Bidder suggests resolving them.
- m. Outline key community relations issues and how they might be resolved.
- n. Describe any difficulties Bidder anticipates encountering in serving the City, in light of the City's status as a municipality and public entity. Explain how Bidder plans to manage them.
- o. Summary of Bidder's Quality Assurance/Quality Control Plan for this project

- p. Statement regarding all work performed two (2) years immediately preceding the date of the Bid, that contains either (a) a contract by contract listing of any written notices of violations of any federal or state prevailing wage statute in which prevailing wage penalties were assessed against the Bidder or paid by the Bidder; or (b) a statement that there have been no such written notices of violations or such penalties assessed; and a statement that Bidder is current on payment of Federal and State income tax withholdings and unemployment insurance payments
- q. Statement regarding all work performed two (2) years immediately preceding the date of the Bid, that contains either (a) a contract by contract listing of any written notices of violations of any federal, state or local DBE/MBE/WBE Program and any damages assessed; or (b) a statement that there have been no such written notices of violations or such penalties assessed; and a statement that Program requirements have been met.
- r. Statement that the Bidder has not been rescinded or debarred from any bidding, contractual, procurement, or other such programs by federal, state or local entities.
- s. Statement that Bidder is current on payment of Federal and State income tax withholdings and unemployment insurance payments
- t. Statement of Bidder's litigation and/or arbitration history over the past five (5) years including final ruling.
- u. Statement of Bidder's bond history over the past five (5) years including any incidences of failure to perform.
- v. MBE / WBE past project performance and compliance with participation goals in comparable size commercial projects.
- w. Statement of Bidder's claims history over the past (5) years including settlement.
- x. Statement of Bidder's liquidated damages applied in projects over the past (5) years.
- y. Indicate experience utilizing Smart Plans on bidding projects.

4. Waiver of Bid Requirements The City Manager or his delegate at any time may waive any requirements imposed by this solicitation or by any City regulation when failure to grant the waiver will result in an increased cost to the City and the requirement waived would be waived for all Bidders for this solicitation and it is in the best interest of the City to grant the waiver. The City Council at any time may waive any requirements imposed in this solicitation by the City's Code of Ordinances when it finds failure to grant the waiver will result in an increased cost to the City and the waived requirement would be waived for all Bidders for this solicitation and it is in the best interest of the City to grant the waiver. The City reserves the right to waive any irregularities and/or formalities as deemed appropriate.

5. Late Bids Bids and modifications of Bids received after the exact hour and date specified for receipt will not be considered unless: (1) the Bid is sent via the U.S. Postal Service, common carrier or contract carrier, by a delivery method that guarantees the Bid will be delivered to the City prior to the submission deadline; or (2) if the Bid is submitted by mail, common carrier or contract carrier it is determined by the City that the late receipt was due solely to an error by the U.S Postal Service, common carrier or contract carrier; or (3) the Bid is timely delivered to the City but is at a different City location than that specified in this IFB; or (4) the City extends the time after the deadline for a force majeure event that could potentially affect any or all Bidders meeting the deadline.

6. Interpretations and Addenda All questions about the meaning or intent of the Bidding Documents may be directed to the Project Manager listed at the end of these Instructions to Bidders. Interpretations or clarifications considered necessary by the Project Manager in response to such questions will be issued by Addenda to all parties recorded as having received the Bidding Documents. Questions received less than ten (10) days prior to the date for opening of Bids may not be answered. Only answers issued by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Addenda may also be issued to modify the Bidding Documents as deemed advisable by the City.

7. Bid Security Requirements All Bids submitted must be accompanied by a Bid deposit in the amount of five percent (5%) of the base Bid which shall be in the form of a Bid Bond (on the form provided in these Bidding Documents), Cashier's Check, Letter of Credit, Certificate of Deposit or other instrument approved in advance by the City. Prior to submittal of the Bid the City Treasurer must approve both the financial institution and text of a Letter of Credit. A Cashier's Check or a Certificate of Deposit shall be payable to the City Treasurer.

8. Forfeiture of Security If a Bidder fails or refuses to execute the Contract when requested by the City, any Bid security given to the City shall immediately become due and payable and forfeited to the City as liquidated damages.

9. Mistake in Bid Security By submitting a Bid, Bidder is agreeing to correct any mistakes on a Bid security submission when requested by the City. When such a mistake occurs and a Bidder fails or refuses to correct the mistake or execute the Contract when requested by the City, any Bid security shall be forfeited to the City and the Bidder shall also be subject to debarment and damages.

10. Bids that Exceed the Engineer's Estimate The City may offer the apparent lowest and best Bidders the option of performing the Work for the Engineer's estimate for the Project with no changes to the Bid requirements or scope of the Project if the Bid is not more than five percent higher than the Engineer's estimate.

11. Post Bid Required Submissions The successful Bidder will be required to submit the following documents with the signed copies of the Bid Form/Contract or within the timeframes specified in the Notice of Intent to Contract letter. Copies of the City's forms that the successful Bidder will be required to sign are bound into this Project Manual for information:

- a. Properly signed, dated, and sealed **Performance and Maintenance Bond and Payment Bond**;
- b. Properly completed certificates of insurance;
- c. Copies of licenses required by the City to do the Work;
- d. A copy of CONTRACTOR's current Certificate of Good Standing or Fictitious Name Registration from the Missouri Secretary of State, or other acceptable proof; and

12. Indemnification – City of Kansas City. The contract documents contains a requirement that Contractor shall indemnify, defend and hold harmless the City and any of its agencies, officials, officers, or employees from and against all claims, damages, liability, losses, costs, and expenses, including reasonable attorneys' fees, arising out of or resulting from any acts or omissions in connection with the contract, caused in whole or in part by Contractor, its employees, agents, or Subcontractors, or caused by others for whom Contractor is liable, including negligent acts or omissions of the City, its agencies, officials, officers, or employees. The contract requires Contractor to obtain specified limits of insurance to insure the indemnity obligation. Contractor has the opportunity to recover the cost of the required insurance in the Contract Price by including the cost of that insurance in the Bid amount.

13. City's Buy American and Missouri Preference Policies It is the policy of the City that any manufactured goods or commodities used or supplied in the performance of any City contract or any subcontract thereto shall be manufactured or produced in the United States whenever possible. When Bids offer quality, price, conformity with specifications, term of delivery and other conditions imposed in the specifications that are equal, the City shall select the Bid that uses manufactured goods or commodities that are manufactured or produced in the United States. The City shall give preference to all commodities manufactured, produced, or grown within the State of Missouri and to all firms, corporations, or individuals doing business as Missouri firms, corporations or individuals, when quality is equal or better and delivered price is the same or less. It is the bidder's responsibility to claim these preferences.

14. Affirmative Action It is the policy of the City that any person or entity entering into a contract with the City, will employ applicants and treat employees equally without regard to their race, color, sex, religion, national origin or ancestry, disability, sexual orientation, gender identity or age. Bidder will be required to comply with the City's Affirmative Action ordinance if Bidder is awarded a contract from the

City totaling more than \$300,000.00. If you have any questions regarding the City's Affirmative Action requirements, please contact HRD at (816) 513-1836 or visit the City's website at www.kcmo.gov.

15. Tax Clearance Bidder will be required to furnish to CITY sufficient proof from City's Commissioner of Revenue, verifying that Bidder is in compliance with the license and tax ordinances administered by City's Revenue Division as a precondition to OWNER making its first payment under any CONTRACT over \$150,000.00. Bidder will also be required to obtain proof of City tax compliance from all of its Subcontractors prior to the Subcontractors performing any Work.

16. Substitutions or "Or-Equal" Items The procedure for submission of substitutions or "or-equal" items is set forth in the General Conditions and Supplementary Conditions.

17. Prevailing Wage Requirements The successful Bidder shall pay the prevailing hourly rate of wages as determined by the Missouri Annual Wage Order and/or Federal Wage Determination set forth in the Project Manual. In case of a conflict between Missouri and Federal wage rates, the higher rate shall apply.

Successful Bidder shall be required to use City's Internet web based Prevailing Wage Reporting System provided by City and protocols included in that software during the term of this Contract. When requested by the City, Bidder shall submit user applications to City's provided Prevailing Wage Reporting System for all applicable personnel and shall require subcontractors to submit same.

MBE/WBE Program Requirements City desires that Minority Business Enterprises (MBE) and Women's Business Enterprises (WBE) have a maximum opportunity to participate in the performance of City contracts. The goals for this specific Project are (15%) MBE participation and (7%) WBE participation. The City's HRD Forms and HRD Instructions for Construction Projects are incorporated into these Bidding Documents and the Contract Documents. The MBE/WBE Directory is available on the City's website at www.kcmo.gov. Please call the Human Relations Department at (816) 513-1836 for assistance.

Successful Bidder shall be required to use City's Internet web based MBE/WBE Program Reporting System provided by City and protocols included in that software during the term of this Contract. When requested by the City, Bidder shall submit user applications to City's provided MBE/WBE Program Reporting System for all applicable personnel and shall require subcontractors/subconsultants to submit same.

18. Waiver of MBE/WBE Requirements The City Council may waive any and all MBE/WBE requirements imposed by any Bidding Document or the MBE/WBE Ordinance and Contract with the lowest and best Bidder if the City Council determines a waiver is in the best interests of the City.

19. Forfeiture of Bid Bond for Failure to Make MBE/WBE Submissions By submitting its Bid, Bidder is agreeing to the following: (1) Bidder has made by Bid opening a good faith effort to meet the MBE/WBE goals established for the Project; or Bidder will continue to make during the 48 hours after Bid opening a good faith effort to meet the MBE/WBE goals established for the Project; and (2) Bidder will timely submit its 00450 HRD Construction Contractor Utilization Plan/Request for Waiver (HRD Form 8) and 00450.01 Letter of Intent to Subcontract for each MBE/WBE listed on the 00450 HRD Construction Contractor Utilization Plan/Request for Waiver; and (3) Bidder will submit documentation of its good faith efforts to meet the MBE/WBE goals when requested by the City. Failure to meet these requirements in good faith will result in Bidder being debarred and forfeiting its Bid Bond.

20. Workforce Program Requirements. City desires that minorities and women have a maximum opportunity to practice their trades on city construction projects. The minimum company-wide goals are a ten percent (10%) minority workforce and two percent (2%) women workforce. The City's HRD Forms and HRD Instructions for Construction Projects are incorporated into these Bidding Documents and the Contract Documents.

Successful Bidder shall be required to use City's Internet web based Workforce Program Reporting System provided by City and protocols included in that software during the term of this Contract. When requested by the City, Bidder shall submit user applications to City's provided Workforce Program Reporting System for all applicable personnel and shall require subcontractors to submit same.

21. Subcontractors, Suppliers and Others

a. If the Contract Documents require the identity of certain Subcontractors, Suppliers and other persons and organizations (including those who are to furnish the principal items of material and equipment) to be submitted to City, the apparent lowest and best Bidder, and any other Bidder so requested, shall submit to City a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work for which such identification is required. An experience statement shall accompany such list with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier or organization if requested by City. If City has reasonable objection to any proposed Subcontractor, Supplier or other person or organization, City may request the apparent lowest and best Bidder to submit an acceptable substitute without an increase in Bid price.

b. By submitting its Bid, Bidder agrees that it has read and understands all the provisions of General Condition No. 6.07, Concerning Subcontractors, Suppliers and Others, and that it will comply with all those provisions including but not limited to mandatory mediation of disputes and the prohibition against paid-if-paid and paid-when-paid contract clauses. It is the City's expectation that all Subcontractors and Suppliers will be treated fairly and in good faith by the successful Bidders and that the successful Bidder will make all reasonable efforts to resolve contract disputes with a Subcontractor or Supplier in a prompt and fair manner. If the City is notified by a Subcontractor or Supplier of a contract claim with the successful Bidder, City will notify the successful Bidder and will request prompt resolution of the claim. City will provide any such Subcontractor or Supplier information regarding mandatory mediation as well as a copy of the Payment Bond. City may notify the Surety that City has taken cognizance of such claim.

c. In accordance with the Missouri Prompt Payment Act, City reserves the right to withhold payment(s) in good faith from the successful Bidder due to: i)the successful Bidder's failure to comply with any material provision of the contract; ii)third party claims filed or reasonable evidence that a claim will be filed; iii)the successful Bidder's failure to make timely payments for labor, equipment or materials; or iv)for damage to a Subcontractor or Supplier.

d. The provisions of GC 6.07 are a material term of the Contract with the City and failure by the successful Bidder to comply with the provisions of this section will be taken into consideration by City in making the determination of lowest and best bidder in any subsequent City contracts.

22. **Pre-Bid Conference** The General Services Department will hold a pre-Bid conference on Thursday, April 30, 2015 at 2:30 PM at City Hall, 414 E 12th St, 4th Floor East Conference Room, Kansas City, MO 64108. Attendance at the pre-Bid conference is ***mandatory*** for all Bidders on this Project. For this Project, the City shall not contract with a Bidder who has not attended the entire pre-Bid conference for this Project.

23. **On-Site Inspection** The Project Sites are only available for inspection by Bidders during the **Mandatory site inspection tours** on May 6, 2015. No accommodations or site visits will be set up after this date. Bidders visiting the Project Site shall be responsible for their own safety.

- Kansas City North Community Center, 3930 Northeast, Antioch Rd, Kansas City, MO 64117
Bidders shall gather in the parking lot by 10:15 AM. Inspection ends at 11:00 AM
- Tony Aguirre Community Center, 2050 West Pennway Terr., Kansas City, MO 64108
Bidders shall gather in the parking lot by 11:15 AM. Inspection ends at 12:00 PM
- Brush Creek Community Center, 3801 Emmanuel Cleaver II Blvd. Kansas City, MO 64130
Bidders shall gather outside the building at the entrance by 2:00 PM. Inspection ends at 2:45 PM
- Hillcrest Community Center, 10401 Hillcrest Rd. Kansas City, MO 64134. Bidders shall gather in the parking lot by 3:00 PM. Inspection ends 3:45 PM.

24. Signatures Each copy of the Bid Form/Contract must be signed and properly dated by the following, as applicable:

Limited Liability Company:

- a member of the limited liability Company authorized to sign on behalf of the company.

Partnership:

- a partner authorized to sign on behalf of the partnership.

Sole Proprietor:

- the proprietor.

Joint Venture:

- the parties to the Joint Venture authorized to sign on behalf of each party to the Joint Venture, or a person authorized by each party to the Joint Venture to sign on behalf of all parties to the Joint Venture.

Corporation:

- a corporate office authorized to sign on behalf of the corporation. Corporation's seal must be attached to the signature.

25. Forward all questions in writing to the following Project Manager and Contract Administrator. Questions received less than three (3) days prior to the Bid Date may not be answered. Interpretations or clarifications considered necessary by the Project Manager in response to such questions will be issued by Addenda to all Bidders. Oral or other interpretations or clarifications shall be without legal effect, even if made at a Pre-Bid Meeting.

Jenny T. Harriman
Project Manager
General Services Department
City Hall, 17th Fl
Kansas City, MO 64106
816-513-2526 Phone
816-513-2727 Fax
E-mail: Jenny.Harriman@kcmo.org

George H. Goodale, CPPO, M.P.A.
Contract Administrator
General Services Procurement
1st Floor, Room 102W, City Hall, 414 E. 12th St
Kansas City, MO 64106
816-513-0808 Phone
816-513-2812 Fax
E-mail: George.Goodale@kcmo.org



For persons with disabilities needing reasonable accommodations please contact Meg Conger at 816-513-6589. If you need to use the Relay Service, please dial 711.

CITY OF KANSAS CITY
DEPARTMENT OF PUBLIC WORKSKANSAS CITY
MISSOURI**BID FORM/CONTRACT**Project Number 07061111Project Title Bid Package #6 - ADA Compliance Project for
Parks and Recreation Department -
Community Center Facilities

1. Bidder, having examined the Bidding Documents, related documents and the Site of the Work, and being familiar with all the conditions affecting the construction of the proposed Work, including Laws and Regulations and the availability of materials and supplies, agrees, if this Bid is selected by CITY, this Bid Form/Contract will become the Contract between Bidder and CITY for Bidder to furnish all labor and materials, equipment and services necessary for the proper completion of the Work in accordance with the Contract Documents, including general construction work at the price(s) stated below, which stated sums include fees and all other charges applicable to materials, appliances, labor and all things subject to and upon which other charges may be levied.
2. Bidder agrees the Contract Documents will comprise the entire agreement between CITY and Bidder. The Contract Documents are identified in the General Conditions and are incorporated into and made part hereof this Bid Form/Contract by reference.
3. Bidder agrees that if this Bid Form/Contract is executed by CITY, Bidder's offer is accepted and this Bid Form/Contract that incorporates all other Contract Documents shall constitute the Contract between the parties. Bidder authorizes the CITY to fill in the Contract Price on this Bid Form/Contract in accordance with Bidder's Bid. Bidder agrees that this Bid Form/Contract may be executed in one or more counterparts, each of which will be deemed an original copy of this Bid Form/Contract and all of which, when taken together, will be deemed to constitute one and the same Bid Form/Contract. This Bid Form/Contract shall be effective upon the execution of counterparts by both parties, notwithstanding that both parties may not sign the same counterpart. The parties' signatures transmitted by facsimile or by other electronic means shall be proof of the execution of this Bid Form/Contract and shall be acceptable in a court of law. A copy of this Bid Form/Contract shall constitute an original and shall be acceptable in a court of law.
4. The Bid Price(s) shall be shown in numeric figures only.

TOTAL BASE BID IN NUMERIC FIGURES	<u>\$ 808,701.00</u>
ALLOWANCE NO. 1	<u>\$94,500.00</u>
TOTAL BID IN NUMERIC FIGURES	<u>\$ 903,201.00</u>

5. The undersigned Bidder has given CITY'S Project Manager written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by the Project Manager or by the DESIGN PROFESSIONAL is acceptable to Bidder.
6. The undersigned Bidder agrees that this Bid shall remain subject to selection by CITY, and may not be withdrawn for ninety (90) days after the day Bids are opened.
7. The undersigned Bidder certifies that this Bid contains no modifications, deviations, riders or qualifications.
8. Forms 00412 Unit Prices and 00413 Allowances contain prices included in the Base Bid, and are incorporated into this Bid. Forms must be completed and returned with this Bid.

9. The undersigned Bidder acknowledges receipt of the following addenda listed by number and date appearing on each addendum:

Addendum Number	Dated	Addendum Number	Dated
(One)	(01May15)	()	()
(Two)	(11May15)	()	()
()	()	()	()
()	()	()	()
()	()	()	()
()	()	()	()
()	()	()	()

10. By submitting its bid, Bidder is agreeing to meet or exceed the minimum employment goals of 10% minority and 2% women during the term of its contract with the City, or request a waiver of the goals. If a waiver is requested, Bidder must establish good faith efforts towards meeting the goals as set forth in the HRD Instructions for Construction Contracts and the City's Workforce Ordinance. Should Bidder fail to meet or exceed the minimum employment goals or otherwise establish that Bidder is entitled to a waiver under circumstances in which Bidder has previously failed to meet or exceed the goals on one or more occasions with the twenty-four month period immediately preceding the completion of the Work under this Bid Form/Contract, Bidder may be suspended from participating, either as a contractor or subcontractor, on any future contract with the City for a period ranging from thirty days to six months as further specified in the Contract Documents.

11. By submitting its bid, Bidder warrants that if its bid should exceed \$300,000.00 and Bidder employs fifty (50) or more people, Bidder has an affirmative action program in place and will maintain the affirmative action program in place for the duration of its contract with the City. Bidder further warrants that it will comply with the affirmative action requirements contained in the General Conditions as incorporated by reference into this Bid Form/Contract.

12. Section 13 through Section 17 constitutes the Affidavit of Intended Utilization required to be submitted by Bidders.

13. By submitting its bid, Bidder is agreeing to the following: (1) Bidder has made by bid opening a good faith effort to meet the MBE/WBE/DBE goals established for the project; or Bidder will continue to make during the 48 hours after bid opening a good faith effort to meet the MBE/WBE/DBE goals established for the project; and (2) Bidder will timely submit its **00450 HRD 08 Contractor Utilization Plan/Request for Waiver** and **00450.01 Letter of Intent to Subcontract** for each MBE/WBE listed on the 00450 HRD 08 Construction Contractor Utilization Plan/Request for Waiver;; and (3) Bidder will submit documentation of its good faith efforts to meet the MBE/WBE/DBE goals when requested by the City. Failure to meet these requirements in good faith will result in Bidder forfeiting its bid bond.

PROJECT GOALS: 15 % MBE 7 % WBE 0 % DBE

BIDDER PARTICIPATION: 16 % MBE 8 % WBE _____ % DBE

14. To the best of Bidder's knowledge, the following are names of certified MBEs and/or WBEs with whom Bidder, or Bidder's subcontractors, presently intend to contract with if awarded the Contract on 00410 Construction Bid Form Contract-Acceptance of Bid 060513

the above project: (All firms must currently be certified by Kansas City, Missouri Human Relations Department)

A. Name of M/WBE Firm Infinite Energy
Address 13625 Oak Street, Kansas City, MO 64145
Telephone No. 816-763-7471
I.R.S. No. 43-1750121
Area/Scope of work Electrical, Fire alarm, Construction Management
Subcontract amount 16%

B. Name of M/WBE Firm Little Joels Asphalt Inc.
Address 134 North 130th St., Bonner Springs, KS
Telephone No. (913) 721-3261
I.R.S. No. _____
Area/Scope of work Asphalt & Paving
Subcontract amount 8%

C. Name of M/WBE Firm _____
Address _____
Telephone No. _____
I.R.S. No. _____
Area/Scope of work _____
Subcontract amount _____

D. Name of M/WBE Firm _____
Address _____
Telephone No. _____
I.R.S. No. _____
Area/Scope of work _____
Subcontract amount _____

E. Name of M/WBE Firm _____
Address _____
Telephone No. _____
I.R.S. No. _____
Area/Scope of work _____
Subcontract amount _____

F. Name of M/WBE Firm _____
Address _____
Telephone No. _____
I.R.S. No. _____
Area/Scope of work _____
Subcontract amount _____

15. By submitting its bid, Bidder is agreeing it will identify and timely submit within 48 Hours after Bid opening those MBE/WBE subcontractors with dollar amounts and scopes of work, which apply to or exceed the MBE/WBE goals for the Project on the **00450 HRD 08 Contractor Utilization Plan/Request for Waiver**.

16. Bidder agrees that failure to meet or exceed the MBE/WBE Goals for the above project will require the Director of Human Relations to recommend disapproval of the bid unless the Director of Human Relations finds the Bidder established good faith efforts towards meeting the goals as set forth in the HRD Forms and Instructions for Construction Projects and the City's MBE/WBE Ordinance.

Bidder: BKM-IEC

Business Entity Type:

- Missouri Corporation
- Foreign Corporation
- Fictitious Name Registration
- Sole Proprietor
- Limited Liability Company *BLM 6-12-05*
- Partnership
- Joint Venture
- Other: (Specify) _____

BIDDER

Legal name & address of Bidder, person firm, partnership, corporation, or association submitting Bid:

BKM-IEC
 Phone No: 913-832-4393
 Cell No: 913-832-4393
 Facsimile No: _____
 Bidder's E-Mail: bmotley@bkmconstructionllc.com
mark@iec8a.com
 Federal ID. No. 46-4928676

I hereby certify that I have authority to execute this document on behalf of Bidder, person, firm, partnership, corporation or association submitting Bid.

By: *[Signature]*
(Signature)

Brent L. Motley
(Print Name)

Title: Managing Partner

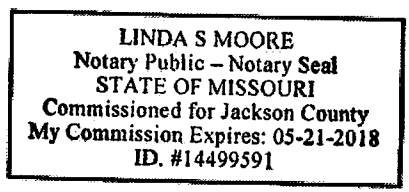
Date: 19 May 2015

(Attach corporate seal if applicable)

NOTARY

Subscribed and sworn to before me this 19th day of MAY, 2015.

My Commission Expires: 5-21-18 *[Signature]*



Vendor No. 83962
Bidder BKM-IEC LLC
Project No. 07061111-002
Title Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department -
Community Center Facilities
Bid Date 5/19/2015

ACCEPTANCE OF BID

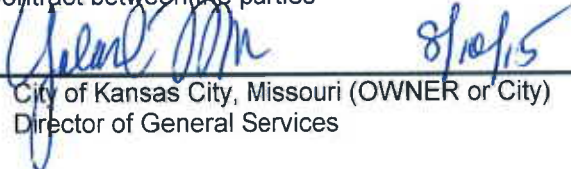
CITY, by executing this Bid Form/Contract, hereby accepts Bidder's Bid and this Bid Form/Contract that incorporates all other Contract Documents shall constitute the Contract between the Parties.

CITY shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents a maximum amount of **NINE HUNDRED THREE THOUSAND TWO HUNDRED ONE DOLLARS AND NO CENTS (\$903,201.00)**. The Contract Price includes:

00412 Unit Prices, included in the Bid, a copy of which is attached

00413 Allowances, included in the Bid, a copy of which is attached

By executing this Bid Form/Contract, CITY accepts Bidder's offer for the Contract Price stated above and this Bid Form/Contract that incorporates all other Contract Documents shall constitute the Contract between the parties



City of Kansas City, Missouri (OWNER or City)
Director of General Services

Approved as to form:



Assistant City Attorney

I hereby certify that there is a balance, otherwise unencumbered, to the credit of the appropriation to which the foregoing expenditure is to be charged, and a cash balance, otherwise unencumbered, in the treasury, to the credit of the fund from which payment is to be made, each sufficient to meet the obligation hereby incurred.



Director of Finance (Date)



EXPERIENCE AND REFERENCE SUMMARY

Project Number: 07061111

Project Title: Bid Package No. 6, Community Centers

Firm's Legal Name	BKM-IEC
Mailing Address	13625 Oak Street, Kansas City, MO 64145
Contact - Name & Email	Mark Newby, mark@iec8a.com
Contact - Phone & Fax	Brent Motley 913-832-4393, Mark Newby 816-763-7471

NO.	PROJECT & LOCATION	OWNER NAME & ADDRESS CONTACT & PHONE NUMBER	PROJECT DURATION & DATE COMPLETED	\$ VALUE
1.	Harold Youth Center, Bldg. 1056 Restrooms renovation with ADA upgrades.	Jim Johnson MICC Fort Leavenworth 535 Kearney Ave. Bldg. 338 Fort Leavenworth, KS 66027	154 days, 31Dec14	\$ 62,842.00
2.	Repair Bldg. 117 Lift, Whiteman Air Force Base, MO	Janet Judkins Contracting, 509 CONS 660 10 th Street, Suite 222 Whiteman Air Force Base, MO 65305-5316	226 days, 04Jan12	\$ 19,307.00
3.	Chaplain Counseling Bldg. 604, Whiteman Air Force Base, MO	Janet Judkins Contracting, 509 CONS 660 10 th Street, Suite 222 Whiteman Air Force Base, MO 65305-5316	120 days, 13Sep11	\$ 68,942.00
4.	Bldg. 48 Annex, Whiteman Air Force Base, MO	Janet Judkins Contracting, 509 CONS 660 10 th Street, Suite 222 Whiteman Air Force Base, MO 65305-5316	180 days, 9Oct12	\$ 206,510.00
5.	MUNS Training Facility, Whiteman Air Force Base, MO	Janet Judkins Contracting, 509 CONS 660 10 th Street, Suite 222 Whiteman Air Force Base, MO 65305-5316	288 days, 25Apr14	\$ 727,330.00
6.	Endeavor Dorm Room Renovations, Whiteman Air Force Base, MO	Janet Judkins Contracting, 509 CONS 660 10 th Street, Suite 222 Whiteman Air Force Base, MO 65305-5316	69 days, 21Jan14	\$ 41,353.00

KCMO ADA –Technical Summary



RELAVENT PROJECTS:

BKM-IEC has executed Federal projects in occupied facilities that have required constant coordination/interaction with the building user and facility managers. Examples of these projects have been performed for the US Army at Fort Leavenworth, the US Air Force and Whiteman Air Force Base and for the Federal Aviation Administration:

- Wheel Chair Lift; FAA, Olathe, Kansas
- Harold Youth Center Restroom Renovations; Fort Leavenworth, Kansas
- Trolley Station Restroom Renovations; Fort Leavenworth, Kansas
- Bldg. 117 ADA Ramp; Whiteman Air Force Base (WAFB), Missouri
- Chaplin Counseling ADA Ramp/Striping; WAFB, Missouri
- Bldg. 48 Annex with ADA restrooms; WAFB, Missouri
- MUNS Training Facility with ADA compliant offices, restrooms, and parking; WAFB, Missouri
- Endeavor Dorms Renovation to ADA Compliance; WAFB, Missouri
- Temporary Living Facilities Restroom Renovations with ADA accessible tubs, WAFB, Missouri
- MUNS Administration Facility; New office building with ADA offices and restrooms, WAFB, Missouri



Mike Meyer
Project General Manager
Kansas City, Missouri

EXPERIENCE:

25 Years – Progressive program and project management experience

EDUCATION:

University of Central Missouri
MS – Industrial Technology
BS – Drafting Technology

CONCURRENT PROJECTS:

- **ADA Compliance**
50% time commitment
- **Other Projects**
50% time commitment

TRAINING:

- 10 Hour OSHA for construction
- US Army Corps of Engineers, Construction Quality Management for Contractors

SKILLS:

- Ability to carry out all aspects of project management
- Consistent record of completing projects safely, on time and within budget
- Ability to coordinate multiple projects and teams simultaneously
- Excellent leadership and communication skills

EMPLOYMENT HISTORY

BKM-IEC 2015 – Present

- Overall management of all aspects of performance based contracts involving multiple renovation and repair type projects simultaneously with multiple trades
- Serve as key point of contact and customer interface, including coordination and interacting among numerous contract agencies with contracting, engineering, customers and end users to ensure best value with high customer satisfaction,
- Coordinate project design, scope development, cost estimation, project budgets, project scheduling, line item estimating, negotiations, problem solving
- Development of multiple contracting opportunities to grow local corporate presence resulting in increased volumes of work
- Subcontractor administration, resource management, risk management, process and procedure implementation, revenue forecasting, project staffing, purchasing, project documentation, and reporting.

Principal (July 2012 to 2014) Glasgow Construction Company, Kansas City, MO

- Principal and Operations Director for the company.
- Responsible for P&L and Operations for the company.

Director of Construction Services (December 2008 to November 2012) SKE International Inc., Platte City, MO

- Led a newly formed division through all phases of commercial construction, indefinite delivery indefinite quantity contracts and multiple award task order contracts.
- Responsible for marketing, business development, contract proposals, client presentations, operations, reporting, profitability and personnel for CONUS (Continental United States) and OCONUS (Outside Continental United States) construction contracts.
- Clients are strictly public funded entities via United States Federal Government and State Government entities.
- Card Holder for the company's contractor licenses in Virginia and West Virginia.

Program Contract Manager (March 2005 to December 2008) SKE International Inc., Fort Leavenworth, KS

- Contract Manager for multiple multi-year construction contracts. To include:
 - \$30 million dollar Job Order Contract at Fort Leavenworth
 - \$9 million dollar indefinite delivery indefinite quantity maintenance and



- repair contract for the 89th Army Reserves
- Multiple award task order contracts for the Air/Army National Guard in Kansas and Iowa
- \$8.1 million dollar Between Occupancy Maintenance/Vacant Housing Maintenance Contract at Fort Leavenworth
- Directed a professional staff of eighteen employees, field staff of fifteen employees and subcontractors of all disciplines.

Project General Manager (August 2002 to March 2005) Centennial Contractors Enterprises Inc., Fort Leavenworth, KS and Richards-Gebuar Marine Support Facility, MO

- Built an effective, self-sustaining project team through the development of direct reports.
- Developed tracking tools to manage and measure tasks and performance.
- Formulated action plans to improve client relations and increase subcontractor base to include small business and small disadvantaged business to meet contractual goals.
- Responsible for overall management of the Job Order Contract, which has a project load of approximately forty simultaneous task orders and annual revenue of \$6,000,000 to \$7,000,000.
- Direct Supervisor for staff of ten to include three Project Managers, two Superintendents, two Quality Control Managers, Project Safety Officer, Construction Intern and Office Manager.

Project Manager (September 2001 to August 2002) Warden Construction (Subsidiary of PI Construction)

- General Manager of Warden Construction's Branch office in Tulsa, Oklahoma responsible for the region covering the west half of Oklahoma.
- Reported directly to the President of the Company.
- Solely managed Job Order Contracts (JOC) for the University of Oklahoma in Tulsa and University of Central Oklahoma. Provided support for operations at Cameron University, University of Oklahoma in Norman and Oklahoma City.

Project Manager (March 1998 to September 2001) PI Construction

- General Manager of the branch office at Pope AFB (January 2000 to September 2001), Whiteman AFB (January 1999 to January 2000) and Houston, TX (March 1998 to August 1998).
- Provided corporate support to various contracts to include Fort Carson in Colorado, Ellsworth AFB in South Dakota, the General Services Administration in Lincoln and Omaha, Nebraska and the Texas Department of Corrections in Huntsville, Texas (Aug 1998 to Jan 1999).
- Completed office start-up to include acquiring and renovating office space. Over-saw the hiring, training and implementation of company processes and procedures of a completely new on-site staff.
- Supervised up to thirteen individuals to include project managers, superintendents, quality control, draftsmen, office managers, and tradesmen.



- Managed annual revenue of \$3,000,000 to \$5,500,000 and as many as eighty-three projects annually.

Assistant Project Manager (June 1997 to March 1998) PI Construction, Whiteman AFB

- Provided Project Management for up to twenty-five simultaneous projects ranging from \$2,500 to \$450,000.
- Acted as General Manager in absence of Project Manager.

Project Coordinator/CADD Operator (September 1996 to June 1997) PI Construction

- Directed project coordination to include scheduling, estimating, contract negotiations, buy-out negotiations, development of submittals and material ordering.
- Developed CADD drawings for initial design and as-built drawings through the use of AutoCAD.
- Provided oversight of construction for Government contracts in support of the B-2 (Stealth Bomber) Mission through the completion of contract compliance inspections, quality assurance inspections, contract negotiations and the development of bid packages to include specifications and design drawings.
- Supervised security escort detail for construction operations in the B-2 and Weapons Storage areas.
- Administered construction performed in military family housing and "secure" areas.
- Acted as liaison between contractors, government offices, clients and Architectural and Engineering firms.

Independent Contractor (May 1990 to May 1993) Glasgow, MO

- Self-employed as an individual contractor building residential housing.
- Trade skills included: rough frame carpentry, concrete finishing, roofing, plumbing and electrical to construct residential housing.



Mark Newby
Quality Control / Safety Manager
Platte County, Missouri

EXPERIENCE:

20 + Years – Progressive program and project management experience

EDUCATION:

University of Missouri, Rolla
 BS – Engineering Management

CONCURRENT PROJECTS:

- **ADA Compliance**
40% time commitment
- **FAA Kansas City JOC**
40% time commitment
- **Ft. Leavenworth BOA**
20% time commitment

TRAINING:

- Engineer in Training (EIT)
- Certified Trainer for OSHA inspectors
- 10 Hour OSHA for construction
- US Army Corps of Engineers, Construction Quality
- Management for Contractors
- Red Cross First Aid, CPR
- 40 Hour HAZWOPR
- 8 Hour HAZWOPR refresher

SKILLS:

- Ability to carry out all aspects of project management
- Consistent record of completing projects safely, on time and within budget
- Ability to coordinate multiple projects and teams simultaneously
- Excellent leadership and communication skills

EMPLOYMENT HISTORY

BKM-IEC 2015 – Present

- Responsible for the overall management of CQC including implementation of the full QC Plan
- Responsible for day-to-day management of all onsite construction quality issues
- Non-conforming items resolution, reviews and approvals of submittals,
- Conducts preparatory, initial and follow-up of daily QC inspections with subcontractors on all phases of work
- Ensures work fully complies with contract documents
- Performs testing, tracking and recording deficient work identified, documenting inspection and test results
- Ensures deficient work identified receives acceptable corrective action
- Supervises the inspection of material and/or equipment
- Maintains as-built drawings
- Full authority over total QC management including directing and expediting the QC Plan, stop work, removal and replacement of non-conforming work, removal of personnel not complying with QC conditions, as well as full authority to speak on behalf of BKM- IEC directly with government personnel on quality issues

Infinite Energy Construction; Knob Noster, Missouri (2013 – 2015) Project Manager

- Overall management of all aspects of performance based contracts involving multiple renovation and repair type projects simultaneously with multiple trades
- Serve as key point of contact and customer interface, including coordination and interacting among numerous contract agencies with contracting, engineering, customers and end users to ensure best value with high customer satisfaction,
- ~~Coordinate project design, scope development, cost estimation, project budgets, project scheduling, line item estimating, negotiations, problem solving~~
- Development of multiple contracting opportunities to grow local corporate presence resulting in increased volumes of work
- Subcontractor administration, resource management, risk management, process and procedure implementation, revenue forecasting, project staffing, purchasing, project documentation, and reporting.

Genesis-MW Joint Venture, Inc. Fort Leavenworth, Kansas 2012 to 2013. Job order contract (JOC): Quality Control and Safety Manager

Perform quality control function to ensure contract compliance. Three phase inspection, submittals, preconstruction, safety inspections, final and warranty inspections. United States



Army Corps of Engineers quality control certification.

SKE International, Inc. Platte City, Missouri 2007 to 2012. International construction and facilities management contractor:

Project Manager / Estimator

Developed designed, drafted detailed scopes of work, created detailed line item estimates, negotiated line item estimates with government, drafted and executed contracts, assured project safety, contract compliance and quality assurance. Key projects/programs included the following:

- Fort Leavenworth Job Order Contract (JOC)
- Building 391 Renovation
- Building 197 Root Hall Renovation
- Building 43 Schofield Hall Renovation
- Building 339 Warriors In Transition Facility
- Bldg 198 Garrison Command Renovation
- Design Build United States Property & Finance Office Camp Dodge, Iowa
- Iowa Multiple Award Task Order Contract (MATOC)
- Veterans Affairs Multiple Award Task Order Contract (VA MATOC)

Hydro Geo Logic, Lenexa, Kansas 20004 to 2007. Environmental consulting and remediation contractor: Project Manager/Quality Control Manager

Developed work plans, executed cost analysis and procurement, developed project/program delivery system for project management and quality control management. Key projects/programs included the following:

- Omaha Lead Site Project, Omaha, Nebraska. Developed project data base and worked on site throughout project.
- Quality assurance/quality control manager - HGL Engineering and Construction Division. Developed comprehensive system with database for execution of projects.
- Fort Ord, California, Pilot Treatment Study and Mid Plume Treatment
 - Project execution including developing scopes of work, creating and operating project schedules, project procurement, meetings, inspections, and reports
- Drafted Project Work Plans, QAQC plans, and Health and Safety Plans for USACE, AFCEE, and AFCEA environmental and construction projects.

Centennial Contractors Enterprises, Inc. Inc., Whiteman Air Force Base, MO and Fort Leavenworth, KS 2002 to 2004. General contractor, design build, government job order contracts (JOC), simplified acquisition of base engineering requirements (SABER), indefinite delivery indefinite quantity (IDIQ): Project Manager / Estimator

Managed over 50 government construction projects with a total value over \$6 million. Developed, designed, and drafted detailed scopes of work, created detailed line item estimates, negotiated line item estimates with government, drafted and executed contracts, assured project safety, contract compliance and quality assurance. Key projects/programs include the following:

- Whiteman Air Force Base Simplified Acquisition Base Engineering Requirements (WAFB SABER)
- Fort Leavenworth Job Order Contract (Ft Lvn JOC)
- Remodel Ozark Dining Facility, WAFB



- Upgrades to new USDB, Ft. Leavenworth
- Pilot Life Support Relocation, WAFB
- Repair Airfield Drainage, WAFB
- Airfield Erosion Control, WAFB
- Firing Range CADAM Wall, WAFB
- Base Perimeter Security Fencing, WAFB
- Remove Under Ground Storage Tanks, WAFB
- Install Above Ground Storage Tanks, WAFB
- Loading Dock at Ozark Dining Facility, WAFB

HARRIS CONSTRUCTION, Lawrence, KS 1998 to 2001. General contractor design build, industrial, and commercial projects: Project Manager

Responsible for managing design build projects from phase 1 design to completion, including budgeting, permitting, procurement, construction, and close out. Key projects include the following:

- National Computer Systems facility project, Lawrence, KS
- Caterpillar, Inc. Mobil-Trac facility project, Emporia, KS

SOMMER ALLIBERT INDUSTRIE, Kansas City, KS 1996 to 1998 International automotive components manufacturer: Project Engineer

Designed and managed construction projects for injection molding facilities in Kansas City, Missouri and Kansas City, Kansas. Key projects include the following:

- Power wash line for Pontiac fascia production
- Floor plan layout/design for guard house, parking, and facility office
- Floor plan layout/design Adhesion Promoter Facility
- Negotiated facility power contract with Board of Public Utilities
- Floor plan layout/design for Delaware Saturn Door Panel Facility
- Floor plan layout/design for GM Door Module Facility
- Design, procurement and execution of Kansas City Injection Molding Facility project

SHIMIZU AMERICA CORPORATION, Marietta, GA 1994 to 1996. International design and construction corporation: Site Manager & Project Engineer

Worked on job locations and provided management support along with project research, project organization, problem solving, scheduling, creating quality assurance and testing programs, contractor and equipment procurement, and document control. Key projects include the following:

- Tomasco, 5603 Project—Columbus, Ohio: Automotive components facility
- NACOM Phase I Project—Griffin, Georgia: Automotive components facility
- NICCA USA Project—Fountain Inn, South Carolina: Chemical manufacturing facility with wastewater treatment facility
- High Point Chemical Corp Toner Binder Project—High Point, North Carolina: Chemical manufacturing facility.



Brent Motley
Superintendent
Leavenworth, Kansas

EXPERIENCE:

27 Years – Construction Experience

15 Years – Superintendent Experience

7 Years – Project Manager Experience

EDUCATION:

US Army Combat Engineer School

Journeyman Carpenter

CONCURRENT PROJECTS:

- ADA Compliance
50% time commitment
- Other Projects
50% time commitment

TRAINING:

- US Army Corps of Engineers, Construction Quality Management for Contractors
- LEED Green Associate
- NACHI Certified Residential Home Inspector

SKILLS:

- Ability to carry out all aspects of project management
- Consistent record of completing projects safely, on time and within budget
- Ability to coordinate multiple projects and teams simultaneously
- Excellent leadership and communication skills

EMPLOYMENT HISTORY

BKM-IEC 2015 – Present

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- Development of multiple contracting opportunities to grow local corporate presence resulting in increased volumes of work
- Subcontractor administration, resource management, risk management, process and procedure implementation, revenue forecasting, project staffing, purchasing, project documentation, and reporting.

2014-Present Majority Partner, BKM-IEC, LLC

Responsible for the daily supervision and management of the joint ventures daily activities.

2011 - Present Owner, BKM Construction, LLC

BKM Construction is a commercial construction company with emphasis on tenant finish, commercial remodel and concrete. Most projects are performed in the government sector. As the owner of a small construction company I am responsible for projects from bid to closeout. Scheduled manpower to match abilities with projects demands. Scheduled & oversee subcontractors, manage material selection & delivery while adhering to construction schedule.

2012- 2013 Project Manager, Genesis Environmental Solutions

Superintendent, Genesis-MW Joint Venture

As a project manager for Genesis it is my responsibility to select and bid BOA (Basic Ordering Agreement) projects at Ft. Leavenworth and if successful I develop detailed SOW in order to buy the project out. I then pre-



pare the subcontracts, project schedule, and administer preconstruction meeting. Working closely with the clients and end users I see the project through to their satisfaction.

As superintendent for Genesis-MW my duties are to take JOC (Job Order Contract) project at the hand off meeting with management and work with quality control to get the project off the ground. This entails making sure all contracts, insurance, activity hazard analysis, and pre construction meetings are in place before beginning work onsite. I maintain all sub contractor dailies, Genesis-MW dailies to the government, verification and approval of certified payroll reports. I oversee the self performed aspects of our projects which range from minor building repairs, ground up construction, HVAC upgrades, and multiple civil projects to include roads and parking lots.

2009-2012

Project Manager, Kcorp Technology Services

My

duties as project manager consist of the oversight of day to day operations of multiple construction projects ranging from renovations to out of ground projects. I fill out all daily reports as to manpower and daily progress. Inspect methods of construction, verify adherence to the specifications and quality control for all the trades working on site. Conduct daily plan review for potential obstacles, weekly on site progress meetings with project managers from the different subcontractors. Work closely on a daily basis with contracting officer's representative to determine the most efficient and agreeable way to achieve the desired end product for the clients. Attend bi weekly progress meeting with the contracting officer and contract specialist overseeing the project. I estimate and assemble pricing for change order request from the contracting officer. Track all job trades progress to prepare an accurate bi weekly billing which is directly linked to the progress schedule. Perform safety inspections, track compliance, and progress with daily pictures.

2007-2009

Superintendent, Schweiger Construction Company

Schweiger Construction is a regional General Contractor and Project Management firm specializing in Critical Facilities and Telecommunications. I was responsible for day to day progress and supervision of sub contractors and self performed work on projects at a data center for the nation's largest bank. I performed all daily jobsite duties to include reports, pictures and documentation, meetings, and manpower. I oversaw CEWA's (Critical Environment Work Authorizations) for all scripted work, HVAC upgrades, and roof replacement.

2007-2007

Superintendent, United Excel Corp

United Excel is a nationwide General Contractor, PM, Design Build firm specializing in Health Care with an emphasis in the government sector. They are located in Merriam, KS. I was responsible for traveling to my assignments performing job walks with clients, locating subs, arranging job walks and bids from subs. Manage day to day operations, sub-contractor oversight, and daily reports from remote locations.



2002-2007

Owner, BKM Construction, LLC

BKM Construction was a commercial construction company with emphasis on tenant finish, commercial remodel and concrete. Most projects were for government sector. As the owner of a small construction company I was responsible for projects from bid to closeout. Scheduled manpower to match abilities with projects demands. Scheduled & oversaw subcontractors, manage material selection & delivery while adhering to construction schedule.

1996-2002

Carpenter, Kaaz Construction

Kaaz is a Commercial/Civil general contractor. While with them, I worked in concrete paving, curbs, gutter, sidewalks, retaining walls, etc. Constructed and/or renovated banks, retail spaces, medical offices/clinic, etc.



PROJECT EXECUTION:

The mission of the project is to correct a list of ADA compliance deficiencies in order to bring select Kansas City Missouri (KCMO) facilities up to 2010 ADA standards. The list of deficiencies and resultant plans were developed by an architect firm directly contracted by the City of KCMO.

Goals to achieve this mission include:

- Correcting parking area grades and pavement
- Correcting concrete walkway grades
- Modifying existing stair cases to provide correct grab rails, spacing and riser backing
- Replacing select stair case assemblies to provide a correct/compliant structure
- Installing guardrails around exposed staircase runs, bleacher runs, off set features
- Correcting select door closer speeds and pull
- Modifying/replacing select casework and counters to provide correct access
- Modifying/replacing select toilet partitions, accessories and hardware to provide correct access
- Adjusting/relocating select tenant features to provide correct access clearances
- Adjusting/relocating select plumbing fixtures to provide correct access/use
- Adjusting/relocating/replacing select door assemblies/hardware to provide correct access/use
- Modifying/adding select fire alarm features
- Modify exterior tenant features to provide correct access/use



Challenges to achieving the goals include working in occupied facilities and executing in separate facilities for this project. BKM-IEC will coordinate with the facility managers to schedule day to day construction. A significant number of the work features will require short downtime for that feature. An example would be adjusting a select door closer. A concise work area will be indicated/barricaded at that immediate area. The work will be performed to allow the facility to keep operations open. An example would be performing plumbing work on one restroom at a time.

If a particular facility has an event that prevents work, BKM-IEC will adjust its focus to another available facility. This requires a flexible, dynamic field approach to quickly and efficiently move in and out of a facility to execute individual, required work features. Therefore, the overall project schedule will indicate overlapping facilities within the Gantt chart durations.

Lead times for specific equipment will be addressed by an early procurement. The materials will be inventoried at the construction office (not at the jobsites). The required materials for a particular work day will be brought to the jobsite when required (just in time/when required inventory). This will prevent lost/misplaced inventory and promotes dynamic tracking/documentation of work feature completion.

Follow up for the corrected features will be a methodical documentation of the corrected work in place. This documentation will be uploaded into the project software (My Smart Plans). Verification of the completed feature will be coordinated with the City of KCMO (the City's contracted architect).

SAFETY:

BKM-IEC will draft, submit and post a project specific safety plan (PSSP). This plan will be posted on each jobsite. The PSSP will address/include the following:

- Specific work activity and preparation for safe execution
- Personal protective equipment (PPE) with modified Level D as a minimum requirement
- PPE requirements for specific activities. Example saw cutting concrete.
- Activity hazard analysis (AHA)
- Material Safety Data Sheets (MSDS)
- Weekly tool box safety meetings
- Safety records/documentation
- Emergency contacts and nearest hospital route from that particular job site
- Emergency/incident meeting point
- First aid and CPR training
- OSHA training/education/awareness



OSHA

BKM-IEC, LLC complies fully with all local, state and federal environmental and safety regulations. BKM-IEC adheres to a rigorous safety plan that meets or exceeds OSHA safety standards. This safety plan is overseen by the Safety Manager and cascaded to subcontractors with daily reinforcement and documentation.

BKM-IEC has no safety violations, environmental infractions. Recent projects by each member of the Joint Venture include:

- **LED Lighting Retrofit- Whiteman Air Force Base** – This \$2M project include the survey, demolition, installation and renovation of lighting applications across the entire military base of Whiteman Air Force Base. There were no recordable accidents or environmental citations/infractions on this 240 Day project that was completed in May of 2015.
- **Harold Youth Center Compliance Upgrades**- This included the demolition and renovation of bathroom facilities on this military installation youth center at Fort Leavenworth, KS. This included bathroom partitions, toilet relocations, sinks and tiling throughout the center. This project was completed in December of 2014 and was free of any recordable accidents and environmental citations or infractions.
- **Horton Agency Renovations- Bureau of Indian Affairs**- This project included the renovations of exterior concrete to comply with ADA wheelchair access for the Bureau of Indian Affairs. This included railing, ramps and stonework. No recordable accidents or environmental citations/infractions were incurred on this project that was completed September of 2014.
- **Fort Leavenworth- Building 275 Trolley**- This renovation project included the comprehensive renovation of all restroom facilities at Building 275 at Fort Leavenworth, KS to comply with ADA requirements. This included the toilets, partitions, railings, and sink relocations. No accidents were reported and no environmental incidents/citations were incurred during this 180 day project that was completed in December of 2014

Statement of BKM-IEC's Experience Modification Ratio- BKM-IEC has not incurred any recordable incidents or lost time since incorporation in February 2014. As such, BKM-IEC's Experience Modification Ratio (EMR) is zero (0)*.

* The following apply as it relates to BKM-IEC's EMR Ratio:

- EMR experience period covers a span of 36 months- BKM-IEC was incorporated in February 2014
- EMR applies a ratio of Actual (incurred/primary) Losses and Expected (primary/excess)- BMK-IEC did not incur any losses since incorporation



TRAFFIC CONTROL:

The project will be performed in occupied facilities that potentially expose civilians (public not working on the jobsite) to the work area. Barricades will be set up in the immediate work area along with a BKM-IEC job board. The job board will include a first aid kit, ABC fire extinguisher, OSHA labor law poster, and project signage. The work area will be monitored by the Superintendent. The work area will be cordoned off as necessary/practically. This will be coordinated with the facility manager. Traffic barricades for the exterior work (pavement and sidewalks) will include signage to help direct civilians to an alternate route entrance.

QUALITY ASSURANCE QUALITY CONTROL

QUALITY CONTROL PLAN

BKM_IEC has established a policy of obtaining the highest level of quality and workmanship in the delivery orders we manage and construct, ensuring quality is the responsibility of each individual and organization associated with each delivery order. This policy is implemented through BKM_IEC's Quality Control Plan (QCP) which monitors and measures performance through all phases of the management and construction processes, including project planning and management, procurement, fabrication, equipment installation and construction. BKM_IEC ensures the highest quality level of performance by:

BKM_IEC's QC Plan Identifies:

- Personnel
- Procedures
- Control and Instructions
- Test
- Records and Forms to

- Maintaining supervised controls and written instructions/governing procedures and practices
- Establishing clearly defined lines of authority and responsibilities for QC compliance
- Defining quality requirements and ensuring conformance to all contractual requirements, specifications and all applicable federal, state, local and trade standards
- Maintaining accurate records of inspections, test certifications, manufacturer's certifications and other documentation
- Notifying management and the Contracting Officer (CO) of quality discrepancies and taking immediate corrective action
- Reporting to the corporate office and performing trend analysis to identify recurring discrepancies and implementing corrective action to eliminate
- Maintaining continuous communication with the Contracting Officer Representatives (COR) to ensure rapid response and common focus

BKM_IEC's QC Plan establishes procedures for the scheduled and unscheduled inspection and review of all items of work including management and construction services to ensure that the quality of work, materials, equipment, workmanship and warranty service comply with the provisions and specifications of each delivery order. Our QC Plan applies to BKM_IEC employees, subcontractors and vendors



providing onsite or offsite materials and/or services. The QC Plan identifies personnel, procedures, control and instructions, test, records and forms to be used, encompassing the following: statement of policy; established responsibilities and authorities of personnel; accountability at all levels of performance; comprehensive design/submittal reviews; an extensive program of control inspections by task; analysis of all levels of performance; early identification of causes and trends not meeting standards; reporting of deficiencies noted; corrective action to resolve/eliminate deficiencies; customer service program; follow-up of corrective actions; documentation of QC activities and warranty management.

The foundation of our proven QC Plan is consistent, open communication through a partnering relationship. As soon as practical after the contract start date and prior to the start of construction, the Project Manager and Quality Control (QC) Manager will meet with the Customer to discuss the QC system and programs. A mutual understanding of the QC details will be developed, including the method of administration for onsite and offsite activities, control methods, testing, coordination of BKM_IEC's management and the interrelationship of BKM_IEC and government control and surveillance as well as forms to be used for recording and documenting QC activities. This finalized, detailed QC Plan will be submitted and approved following contract award. Throughout each delivery order, the QC Manager will conduct QC Meetings weekly, or as requested, with the Project Manager and Site Superintendent responsible for the work on each delivery order. These meetings will be utilized to enhance communication and documentation for each delivery order. The following items will be covered:

- Delivery-order status and review of documents and checklists for compliance with codes, specifications and contract requirements
- Review the schedule and the status of work including work or testing accomplished, rework items identified and rework items completed since the last meeting
- Review the status of submittals including those reviewed and approved since the last meeting and those required in the near future
- Review the schedule of work to be accomplished in the next week and documentation required
- Establish completion dates for rework items, scheduling preparatory, initial and follow-up inspections and testing
- Discuss the status of offsite work or testing and documentation required
- Resolve QC and production problems
- Address deficiency items that require documentation, resolution plan
- Develop methods to eliminate the recurrence of problems identified

DESCRIPTION OF QC SYSTEM

The following sections identify our personnel, procedures, control and instructions, test, records and forms to be used.



QC Personnel

The Project Manager coordinates with the QC Manager. The QC Manager implements the three-phase control system for all aspects of work specified in each delivery order. The QC Manager reports directly to the Project Manager, who is responsible for the overall management of each delivery order, including quality and production. The QC Manager has stop-work authority as well as full authority to act in all QC matters, including matters requiring removal and replacement of non-conforming work or stopping work if he feels a given QC, life or property safety problem warrants. He also has responsibility for maintenance and completion of as-built drawings, and arranges with testing laboratories to perform required tests on materials for the project. The implementation and enforcement of this QC Plan will be the QC Manager's responsibility for the duration of this contract. Duties include: responsibility for overall onsite QC activities; management of daily preventive and corrective QC activities for the company and its subcontractors; conducting weekly QC meetings; coordinating and notifying Quality Assurance Evaluators of QC activities; implementing the three phases of control established by the QC Plan; ensuring testing is performed; maintaining warranty administration and documentation required under the contract. The QC Manager is responsible for certifying that all submittals are in compliance with the contract requirements before submitting to the government. In the absence of the QC Manager, an Alternate QC Manager will be assigned. He will assist on a daily basis with the review and preparation of submittals as well as daily inspections. NOTE: The Safety Manager may perform the duties of a QC Manager for certain delivery orders as allowed by the CO. In addition, if an increase in workload requires, BKM_IEC has the ability to assign additional QC Inspectors to assist the QC Manager, ensuring that all work is performed in accordance with delivery-order plans and specifications as well as the standards and methods specified in the QC Plan.

Procedures

Completion inspection and project-acceptance activities include punch-out, pre-final and final acceptance inspections and completion of all construction and administrative requirements for acceptance and close-out of the delivery order. Each of these inspections will ensure that: BKM_IEC employees and subcontractors have complied with the level of workmanship and quality standards expected; check all work is checked to determine if, as a minimum, the quality of workmanship meets acceptable preparatory, initial phase and industry standards; work performed is in accordance with the specifications, drawings and trade codes; testing has been performed; approved delivery-order modifications and change orders have been adhered to; rework items have been corrected and work is completed and ready for government acceptance and occupancy.



The assigned Site Superintendent will notify the QC Manager when he feels construction will be completed. The completion date will be accurately projected through the use of scheduling techniques. The QC Manager will schedule a punch-out inspection with the Site Superintendent and foremen of subcontractors involved in the delivery order. They will inspect all construction, operate all systems and cycle all movable equipment to ensure proper quality levels and operations.

All deficiencies noted will be recorded on a Punch List Form via Procore software. All deficiencies not immediately corrected will have a scheduled completion date entered and a “punch-list schedule” will be developed by the Project Manager. This schedule will be distributed by the Project Manager to the QC Manager, Site Superintendent, subcontractors and COR. The Site Superintendent will be responsible for coordination and correction of punch-list items. The QC Manager will inspect each punch list item to ensure correction when notified by the Site Superintendent. In the event a subcontractor fails to correct a punch list item as scheduled, written notice will be given. The Site Superintendent will update the hard copy of punch list items daily and provide the information to the Project Manager to update the punch list item status and punch list schedule.

Built-In Quality
Because BKM_IEC understands delivery-order requirements and the expected level of quality from performance of 157 delivery orders to date, quality is proactively built in to each delivery order from the beginning. Work is planned, inspected and executed as such that punch list items are minimized thereby turning Pre-Final Inspections into Final Inspections. This expedited pro-

When all punch-list items have been completed, the QC Manager will provide notice three working days in advance to the CO to schedule a Pre-Final Inspection, and will provide a copy of completed punch list items generated from the punch-out inspection. Deficiencies identified in the Pre-Final Inspection will be corrected and the CO will be notified a minimum of five working days in advance to allow for scheduling of the final acceptance inspection. All delivery-order requirements will be verified and documented complete prior to notification. In addition, the following items will be completed prior to Final Inspection: submission of all O&M Manuals; training of maintenance personnel including verbal instructions and demonstrations of systems, equipment and components; submittal of updated list of subcontractors and material suppliers including names, addresses and telephone numbers of key personnel; delivery of labeled keys and special tools to the customer; verification that master keys and safe combinations were delivered to the customer directly from the hardware supplier; submission of record drawings in hard copy and CAD format compatible with current software; submission of as-built shop drawings; submission of certification of testing and balancing; submission of written certification that no asbestos containing materials (ACM) are included; submission of all written guarantees and certificates; and, installation of warranty tags.



The Project Manager, Site Superintendent and key subcontractors will attend the final acceptance inspection. The purpose of this inspection is to verify that all requirements of the delivery order have been met and all corrections made and recorded. The Project Manager will issue a Notice of Completion to the customer that all work is complete and is in compliance with the contract/delivery order requirements. The Project Manager will request a joint final inspection by providing notice to the customer a minimum of five working days prior to the desired inspection date and time. Documentation of all inspections and deficiency corrections will be maintained in the delivery order file and will be available for review by the customer, as requested.

Control and Instructions

The QC Manager will assure that no work proceeds until the appropriate control phase has been performed. These phases include Preparatory, Initial and Follow-Up and will be performed by the QC staff on each definable feature of work (defined as any item which is distinct from other processes) and may be hidden by subsequent activity. The following features are representative of those to be addressed by control phases on delivery orders; however, actual features will be dictated by the specific work to be performed as identified during the pre-construction and coordination meeting. Delivery-order specific definable features of work will be defined by the QC Manager and submitted with the Work Plan for each delivery order.

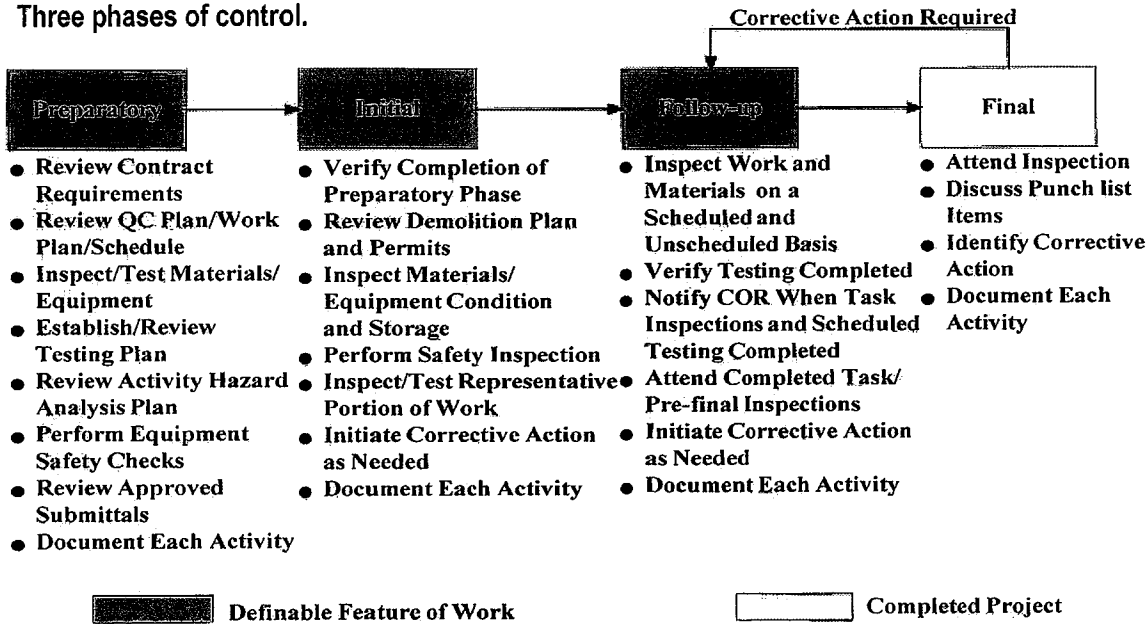
Preparatory, initial and follow-up control phases outlined in **Figure 4** will be implemented by the QC Manager with the Project Manager and Site Superintendent and included on the construction schedule. The schedule will be updated to reflect the status of control phases as well as on the Daily Report. Any slippage will be re-scheduled and reflected on a revised construction schedule, as required. The CO will be notified of any re-scheduling of control phases a minimum of 48 hours prior to accomplishment. NOTE: Follow-up inspections will be performed by the QC Manager daily or as frequently as necessary to assure continuing compliance with contract requirements including control testing until completion of the particular segment of work. Minutes of the preparatory and initial phases of control and results of all three phases of control will be prepared by the QC Manager and attached to the Daily Report.

Level of Workmanship

From the past five years of performing on the WAFB SABER, BKM_IEC personnel have first-hand knowledge of acceptable workmanship standards. BKM_IEC Delivery Order Teams work closely with WAFB inspectors in a team approach as construction is performed to ensure all work is completed in accordance with design requirements and contract speci-

Additional inspections include:

Three phases of control.



- *Daily Inspections.* The QC Manager will inspect each task performed on each delivery order at least daily to maintain consistent quality. He will ensure that testing is performed as scheduled and will also perform periodic offsite inspections, if applicable
- *Daily Job Site Clean-up Inspections.* The QC Manager will, during the pre-construction meeting for each delivery order, instruct the in-house workforce and subcontractors that each jobsite must be cleaned up and secured at the end of each work day. The Site Superintendent is responsible for ensuring that the in-house workforce and subcontractors perform daily jobsite cleanup. Any materials at the jobsite will be neatly arranged and well protected from the weather. Heavy equipment which is being utilized at the jobsite will be secured and required security measures will be taken
- *Completed Phase Inspections.* This process requires that completed phases of work be inspected before burying or covering the items in the process of performing the next task. This inspection may be a joint interaction between the QC Manager, Site Superintendent and the government. The QC Manager will ensure that the deficiencies noted receive immediate corrective action



Tests

BKM_IEC will identify, along with the CO, specific testing requirements for each delivery order. Testing will be conducted per industry standards and manufacturer recommendations, along with government specifications. BKM_IEC will utilize the services of an independent, local, government-approved testing laboratory, as required. BKM_IEC will arrange for manufacturer inspections and certifications, as required. The QC Manager will review the specific testing requirements and indicate required testing methods and frequencies for review with the CO during the pre-construction meeting. The testing requirements will be incorporated into the delivery-order schedule, as required.

Records and Forms

All documentation submitted will be in the format agreed to with the CO and will include all certifications in accordance with contract requirements. Documentation will be maintained onsite during performance each delivery order. All documentation will be prepared and submitted both electronically and in hard copy and include:

- Daily Report
- Work Plan and Testing Log
- Master Deficiency List
- QC Meeting Minutes
- Test Report Form
- Invoice Certification
- Completion Certification
- One Year Warranty Inspection Report
- Punch List Form

Submittals

An established submittal review process is implemented to ensure all submittals are accurate and meet specifications. Working as a team with our subcontractors and WAFB, BKM_IEC understands submittal standards upfront which minimizes resubmittal and rejection. BKM_IEC works diligently to ensure submittals are submitted and returned timely as not to impact delivery-order sched-

Submittals

Requirements for submittals will be determined from the material and equipment listing developed in the delivery –order proposal and/or negotiation phase. Submittals for certain items will be prepared during the proposal preparation phase. All submittals will be itemized on a Submittal Register that will be used to schedule the dates that submittals are required from the company and its subcontractors or suppliers. Submittal registers will be submitted prior to material processing. Submittal required dates will be coordinated by the QC Manager and tracked on the construction schedule by the Project Manager. Submittal procedures will be in accordance with the project specifications.

7	Temporary Living Facilities, Whiteman Air Force Base, MO	Janet Judkins Contracting, 509 CONS 660 10 th Street, Suite 222 Whiteman Air Force Base, MO 65305-5316	180 days, 22May14	\$ 176,653.00
9	MUNS Administration Facility, Whiteman Air Force Base, MO	Janet Judkins Contracting, 509 CONS 660 10 th Street, Suite 222 Whiteman Air Force Base, MO 65305-5316	210 days, WIP	\$ 745,526.00
10	Trolley Station Renovation, Fort Leavenworth, KS	Janet Judkins Contracting, 509 CONS 660 10 th Street, Suite 222 Whiteman Air Force Base, MO 65305-5316	154 days, 31Dec14	\$ 128,000

Statement of Disclosure and Testimony

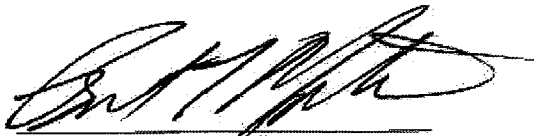


May 14th, 2015

BKM-IEC Statement of Disclosure & Testimony:

BKM-IEC attests to the following Statements to be truthful and accurate- individually and as a whole.

1. BKM-IEC HAS NOT within the preceding (2) years (or ever) received any written notices of violations or such penalties assessed to any relation of any federal or state prevailing wage statutes in which BKM-IEC were assessed penalties or made any payments. BKM-IEC is current on the payment of Federal and State income tax withholdings and unemployment insurance payments.
2. BKM-IEC HAS NOT within the preceding (2) years (or ever) received any written notices of violations as it relates to any federal, state, or local DBE/MBE/WBE Programs. There have been no such written notices of violations or such penalties assessed and all Program requirements have been met.
3. BKM-IEC has not been rescinded or debarred from any bidding, contractual, procurement, or other such programs by federal, state or local entities.
4. BKM-IEC is current on payment of Federal and State income tax withholdings and unemployment insurance payments.
5. BKM-IEC has not been involved in any litigation or arbitration over the past (5) years.
6. BKM-IEC has never, or within the past (5) years- had any incidences of failure to perform.
7. BKM-IEC has not had any citations, complaints or registered violations regarding the failure to meet any MBE/WBE participation goals. IEC, the minority partner in this joint venture, is a certified Minority Owned Enterprise with the City of Kansas City and the Small Business Administration.
8. BKM-IEC has not had any claims or associated settlements in the past (5) years.
9. BKM-IEC has not incurred any liquidated damages on any projects in the past (5) years.
10. BKM-IEC has used the Smart Plans tool when evaluating projects that issued by the City of Kansas City on a weekly basis. The two members of BKM-IEC, individually have experience in accessing, navigating the Smart Plan system to prepare estimates and manage projects.



Managing Partner- BKM
Brent Motley



Partner- IEC
Nilson Goes



DEPARTMENT OF VETERANS AFFAIRS
Center for Verification and Evaluation
Washington, DC 20420

APR 22 2015

In Reply Refer To: 00VE

Mr. Brent Motley
BKM-IEC LLC
DUNS: 079302979
13625 Oak Street
Kansas City, MO 64145

Dear Mr. Motley:

On behalf of the U.S. Department of Veterans Affairs (VA), Center for Verification and Evaluation (CVE), I am writing to inform you that BKM-IEC LLC has been verified as a service-disabled Veteran-owned small business (SDVOSB) and added to the Veteran business database at www.vip.vetbiz.gov. BKM-IEC LLC will be eligible to participate in Veterans First Contracting Program opportunities with VA. **This verification is valid for two years from the date of this letter.**

To promote BKM-IEC LLC's verified status, you may use the following link to download the logo for use on marketing materials and business cards:

http://www.vetbiz.gov/cve_completed_s.jpg

To ensure that BKM-IEC LLC is correctly listed in the Vendor Information Pages, check BKM-IEC LLC's profile for the verified logo. Please notify us if the logo is not present within 72 hours of receipt of this letter.

While CVE has confirmed that BKM-IEC LLC is in compliance with the regulation, BKM-IEC LLC must inform CVE of any changes or other circumstances that would adversely affect its eligibility. Eligibility changes not reported to CVE within 60 days could result in a referral to the Office of Inspector General (OIG), a referral to the Debarment and Suspension Committee, and the initiation of cancellation proceedings—all of which could result in BKM-IEC LLC being removed from the VIP Verification Program.

Please be advised that this letter and other information pertaining to BKM-IEC LLC's verification application may be subject to Freedom of Information Act (FOIA) requests. In addition, all companies approved for the program may be required to participate in one or more post-verification audits. Please retain a copy of this letter to confirm BKM-IEC LLC's continued program eligibility.

At any time if BKM-IEC LLC discovers one or more NAICS Code(s) that are other than small on its CVE VIP profile, CVE will require all other than small NAICS Codes to be removed within five (5) business days. If these NAICS Codes are not removed within the

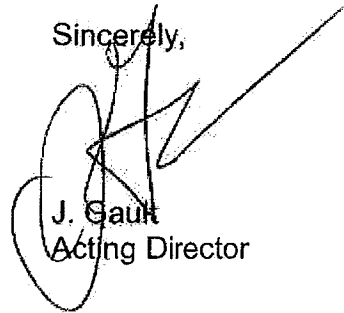
Page 2.

Mr. Brent Motley

allotted five (5) business days, CVE may request the U.S. Small Business Administration (SBA) to conduct a formal size determination. In addition, CVE may initiate a referral to OIG, Debarment and Suspension Committee and or pursue cancellation proceedings. All of the aforementioned referrals and procedures could result in BKM-IEC LLC being removed from the VIP Verification Program.

Thank you for your service to our country and for continuing to serve America through small business ownership.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Gault', is written over the typed name. The signature is stylized with a large loop and a long, sweeping stroke extending to the right.

J. Gault
Acting Director

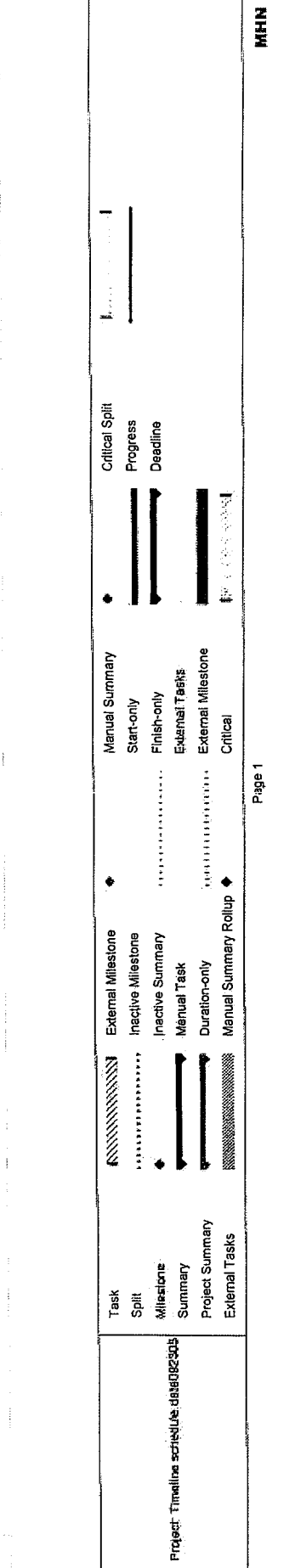


Package 6 Proposal Schedule Community Centers

Tue 5/19/15

INFINITE ENERGY CONSTRUCTION

ID	Task Name	Span	Plan Start	Plan Finish	Link	June 1	July 1	August 1	September 1	October 1	November 1	December 1	January 1	February 1
1	AWARD	9 days	Tue 5/19/15	Mon 6/1/15		5/19	5/24	6/1	6/8	6/15	6/22	6/29	7/6	7/13
2	Bid Delia	0 days	Tue 5/19/15	Tue 5/19/15		5/19	5/19							
3	Award	0 days	Mon 6/1/15	Mon 6/1/15		6/1	6/1							
4	SUBMITTALS	10 days	Mon 6/1/15	Fri 6/12/15		6/1	6/12							
5	Project Safety Plan	2 wks	Mon 6/1/15	Fri 6/12/15		6/1	6/12							
6	Prdct Submittals	2 wks	Mon 6/1/15	Fri 6/12/15		6/1	6/12							
7	EQUIPMENT MFG	40 days	Mon 6/1/15	Fri 8/7/15		6/1	8/7							
8	Doors	6 wks	Mon 6/1/15	Fri 8/7/15		6/1	8/7							
9	Lockers	6 wks	Mon 6/1/15	Fri 8/7/15		6/1	8/7							
10	Signs	6 wks	Mon 6/1/15	Fri 8/7/15		6/1	8/7							
11	Toilet Accessories	4 wks	Mon 6/1/15	Fri 7/10/15		6/1	7/10							
12	Steel handrails	4 wks	Mon 6/1/15	Fri 7/10/15		6/1	7/10							
13	WORK	130 days	Mon 6/1/15	Fri 12/11/15		6/1	12/11							
14	Exterior paving, concrete, striping	6 wks	Mon 6/1/15	Fri 7/24/15		6/1	7/24							
15	Steel handrails	8 wks	Mon 6/1/15	Fri 9/4/15		6/1	9/4							
16	Interior Renovations	18 wks	Mon 6/1/15	Fri 12/11/15		6/1	12/11							
17	FINAL PHASE	10 days	Mon 12/14/15	Fri 12/25/15		12/14	12/25							
18	Pre-final	2 wks	Mon 12/14/15	Fri 12/25/15		12/14	12/25							
19	Final	0 days	Fri 12/25/15	Fri 12/25/15		12/25	12/25							
20	Contract End Date	0 days	Wed 1/27/16	Wed 1/27/16		1/27	1/27							





BID BOND

Project No.: 07061111

Project Title: Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community Center Facilities

Bond Number 5594

KNOW ALL MEN BY THESE PRESENTS: That BKM-IEC of 13625 Oak Street, Kansas City, MO 64145, as Principal, and Travelers Casualty and Surety Company of America as Surety, hereby bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents unto KANSAS CITY, MISSOURI, a constitutionally chartered municipal corporation, as Obligee, in the sum of

FIVE PERCENT OF TOTAL AMOUNT BID Dollars (\$ 5%), lawful money of the United States.

WHEREAS, Principal is herewith submitting its Bid to enter into a contract with Kansas City for the above referenced project,

NOW, THEREFORE the condition of this obligation is such that if the Principal is awarded the contract the Principal will, within the time required, enter into a contract and give a good and sufficient surety bonds to secure the performance of the terms and conditions of the contract and for the prompt payment of all labor and material furnished in the prosecution thereof as required by the contract documents, then this obligation shall be void; otherwise the Principal and Surety will immediately pay unto the Obligee the full amount of this bond as liquidated damages for failure to fulfill the conditions of this obligation, but in no event shall the Surety's liability exceed the penal sum hereof.

Signed, sealed and delivered this 19th day of May, 2015.

BIDDER AND PRINCIPAL

Name, address and facsimile number of Bidder and Principal

BKM-IEC

13625 Oak Street

Kansas City, MO 64145

816-763-0295

I hereby certify that I have authority to execute this document on behalf of Bidder and Principal.

By: [Signature]

Title: Managing Partner

(Attach corporate seal if applicable)

SURETY

Name, address and facsimile number of Surety:

Travelers Casualty and Surety Company of America
One Tower Square
Hartford, CT 06183
913-402-5457

I hereby certify that (1) I have authority to execute this document on behalf of Surety; (2) Surety has an A.M. Best rating of A- or better; (3) Surety is named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (most current revision) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury; and (4) Surety is duly licensed to issue bonds in the State of Missouri and in the jurisdiction in which the Project is located.

By: Kathy L. Fagan
Title: Kathy L. Fagan, Attorney-in-Fact
Date: May 19, 2015

(Attach seal and Power of Attorney)

SURETY VERIFIED BY
George H. Goodale

MAY 26 2015



POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company

Attorney-In Fact No. 228286

Certificate No. 006001662

KNOW ALL MEN BY THESE PRESENTS: That Farmington Casualty Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company are corporations duly organized under the laws of the State of Connecticut, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Casey M. Parisoff, Raymond C. Ritchey Jr., David H. Parkhurst, Michael P. Fagan, Vickie J. Nickel, Lisa A. Summers, and Kathy L. Fagan

of the City of Overland Park, State of Kansas, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 29th day of July, 2014.

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company



State of Connecticut
City of Hartford ss.

By: [Signature]
Robert L. Raney, Senior Vice President

On this the 29th day of July, 2014, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.
My Commission expires the 30th day of June, 2016.



[Signature]
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

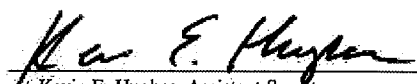
FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this _____ day of MAY 19 2015, 20____.


Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-in-Fact number, the above-named individuals and the details of the bond to which the power is attached.

**HRD INSTRUCTIONS
FOR CONSTRUCTION CONTRACTS**

PART A. MINORITY/WOMEN BUSINESS ENTERPRISE REQUIREMENTS

I. City's MBE/WBE Program.

- A. The City has adopted a Minority/Women Business Enterprise ("MBE/WBE") Program (Sections 3-421 through 3-469, Code of Ordinances) (the "Program") to implement the City's policy of supporting the fullest possible participation in City contracts and change orders of firms owned and controlled by minorities and women. Each construction contract may have an MBE and/or WBE goal for participation. An MBE or WBE goal is a numerical objective the City has set for the contract that may be awarded pursuant to these bid specifications. Goals are stated as a percentage of contract dollars. For example, if an MBE goal for a contract is 10% and a Bidder submits a bid of \$100,000, the goal for MBE participation would equal \$10,000. The specific MBE/WBE goals on this contract are set forth elsewhere in the bid specifications.
- B. These Human Relations Department ("HRD") Forms & Instructions are part of the BIDDING DOCUMENTS and CONTRACT DOCUMENTS as defined in the General Conditions. By submitting a Bid, the Bidder agrees, as a material term of the contract, to carry out the City's MBE/WBE Program by making good faith efforts to include certified MBE/WBEs in the contract work to the extent of the goals listed for the contract and to the fullest extent consistent with submitting the lowest and best bid to the City. Bidder agrees that the Program is incorporated into this document and agrees to follow the Program. Although it is not a requirement that a Bidder in fact meet or exceed both the MBE and WBE Goals, it is a requirement for approval of the Bid that a Bidder objectively demonstrate to the City that good faith efforts have been made to meet the Goals. Bidders must attempt to meet both the MBE and WBE goals and request a waiver if either is not met.
- C. The following HRD Forms are attached and must be used for MBE/WBE submittals:
1. Contractor Utilization Plan/Request for Waiver (HRD Form 8); and
 2. Letter of Intent to Subcontract (HRD Form 00450.01); and
 3. Timetable for MBE/WBE Utilization (HRD Form 10); and
 4. Request for Modification or Substitution (HRD Form 11); and
 5. Contractor Affidavit for Final Payment (Form 01290.14); and
 6. Subcontractor Affidavit for Final Payment (Form 01290.15).

Warning: The City only gives MBE/WBE credit for a Bidder's use of City certified MBE/WBEs. A certified MBE/WBE firm is a firm that has been certified by the City's Human Relations Department as such. An MBE/WBE firm must be certified before the date on which the bid is due and the MBE/WBE firm must have filed an application for certification no later than forty-five (45) days prior to the Invitation for Bid. Certified MBEs and WBEs are listed in the M/W/DBE Kansas City Mo. Online Directory, which is available on the City's website at www.kcmo.org. Before a Bidder submits a bid, Bidder should contact HRD and consult the directory to make sure any firm proposed for

use for MBE/WBE participation has been certified.

II. Required Submissions Following Bid Opening.

- A. Bidder must submit the following documents within forty-eight (48) hours of bid opening:
1. **Contractor Utilization Plan/Request for Waiver (HRD Form 8).** This form states a Bidder's plan to use specific certified MBE/WBEs in the performance of the contract and includes the following:
 - a. The work to be performed by each MBE/WBE and the amounts each is to be paid for the work; and
 - b. The name, address, race or ethnic origin, gender and employer identification number or social security number of each MBE/WBE that will perform the work.
 - c. An automatic request for waiver in the event Bidder has not met or exceeded the MBE and/or WBE goals for the contract but believes that it has made good faith efforts to meet or exceed the goals and desires a waiver of the goals. If a waiver is requested, HRD will examine the Bidder's documentation of good faith efforts and make a recommendation to grant or deny the waiver. HRD will recommend a waiver be granted only if the Bidder has made good faith efforts to obtain MBE/WBE participation.
 2. **Letter(s) of Intent to Subcontract (HRD Form 00450.01).** A letter must be provided from each MBE/WBE listed on the Contractor Utilization Plan. These letters verify that the MBE/WBE has agreed to execute a formal agreement for the work and indicate the scope of work to be performed and the price agreed upon for the work.

III. Required Submission when Requested by City.

- A. Bidder must submit the following documents when requested by City:
1. **Timetable for MBE/WBE Utilization (HRD Form 10).**
 2. **Documentation of good faith efforts.**

IV. Required Monthly Submissions during term of Contract.

- A. Bidder must submit the following document on a monthly basis if awarded the contract:
1. **M/WBE Monthly Utilization Report (HRD Form 00485.01).** This report must be submitted to the Director by the 15th of each month. Failure to submit timely reports may result in delays in processing of current and future contract approvals and payment applications.

V. Required Submittals for Final Contract Payment.

- A. Contractor must submit the following documents with its request for final payment under the contract:
1. **Contractor Affidavit for Final Payment (Form 01290.14)**

2. Subcontractor Affidavit(s) for Final Payment (Form 01290.15)

VI. Additional Submittals.

- A. Contractor may be required to make additional submittals during the term of the Contract, including **Request for Modification or Substitution (HRD Form 11)**. Refer to Section IX, Modification of the Contractor Utilization Plan or Substitution of an MBE/WBE, for additional instructions on when this form must be submitted.

VII. MBE/WBE Participation Credit.

- A. The following shall be credited towards achieving the goals:
1. The total contract dollar amount that a prime contractor has paid or is obligated to pay to a subcontractor that is a qualified MBE or WBE, except as otherwise expressly provided for herein.
 2. Twenty-five percent (25%) of the total dollar amount paid or to be paid by a prime contractor to obtain supplies or goods from a supplier who is a qualified MBE or WBE.
 3. Ten percent (10%) of the total dollar amount paid or to be paid by a prime contractor to obtain supplies or goods from a supply broker who is a qualified MBE or WBE.
 4. One hundred percent (100%) of the total dollar amount paid or to be paid by a prime contractor to a manufacturer of construction supplies who is a qualified MBE or WBE.
 5. Subcontractor participation with a lower tier MBE/WBE subcontractor using one of the above methods of participation.
- B. **NO CREDIT**, however, will be given for the following:
1. Participation in a contract by a MBE or WBE that does not perform a commercially useful function as defined by the Program; and
 2. Any portion of the value of the contract that an MBE or WBE subcontractor subcontracts back to the prime contractor or any other contractor who is not a qualified MBE/WBE; and
 3. An MBE or WBE prime contractor's own participation in its contract with City; and
 4. Materials and supplies used on the contract unless the MBE/WBE is responsible for negotiating the price, determining quality and quantity, ordering the materials and installing (where applicable) and paying for material itself; and
 5. Work performed by an MBE or WBE in a scope of work other than that in which the MBE or WBE is currently certified.

VIII. Methods for Securing Participation of MBE/WBEs and Good Faith Efforts.

- A. A bidder is required to make good faith efforts to achieve the MBE/WBE goals. Good faith efforts are efforts that, given all relevant circumstances, a Bidder actively and aggressively seeking to meet the goals can reasonably be expected to make. Good faith efforts must be made before the Bidder submits a Contractor Utilization Plan, in other words, within 48 hours of bid opening.

Warning: Efforts to obtain MBE and/or WBE participation made after a Contractor Utilization Plan is submitted cannot be used to show the Bidder made good faith efforts.

- B. In evaluating good faith efforts, the Director of HRD will consider whether the Bidder has performed the following, along with any other relevant factors:
1. Advertised opportunities to participate in the contract in general circulation media, trade and professional association publications, small and minority business media, and publications of minority and women's business organizations in sufficient time to allow MBE and WBE firms to participate effectively.
 2. Provided notice to a reasonable number of minority and women's business organizations of specific opportunities to participate in the contract in sufficient time to allow MBE and WBE firms to participate effectively.
 3. Sent written notices, by certified mail or facsimile, to qualified MBEs and WBEs soliciting their participation in the contract in sufficient time to allow them to participate effectively.
 4. Attempted to identify portions of the work for qualified MBE and/or WBE participation in order to increase the likelihood of meeting the goals, including breaking down contracts into economically feasible units. A Bidder should send letters by certified mail or facsimile to those MBE/WBE contractors identified by HRD listed in those categories, which are in those subcontractors' scope of work. The portion of work for which a proposal from an MBE/WBE is being solicited shall be as specific as possible. Letters which are general are not acceptable.
 5. Requested assistance in achieving the goals from the Director and acted on the Director's recommendations.
 6. Conferred with qualified MBEs and WBEs and explained the scope and requirements of the work for which their bids or proposals were solicited.
 7. Attempted to negotiate in good faith with qualified MBEs and WBEs to perform specific subcontracts; not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Documentation of good faith negotiations with MBE/WBEs from whom proposals were received in an effort to reach a mutually acceptable price should include:
 - a. Names, addresses and telephone numbers of MBE/WBEs that were contacted and date of contact;
 - b. The information provided to MBE/WBEs regarding the plans and specifications for portions of the work to be performed by them;
 - c. The reasons no agreement was reached with any MBE/WBE, including the basis for any Bid rejection (i.e., availability, price, qualifications or other);
 - d. Descriptions of attempts to provide technical assistance to MBE/WBEs to obtain necessary insurance and/or to obtain necessary supplies at the best prices available.
 8. Within five (5) working days after drawing the bid specifications, sent certified letters,

verifiable e-mails or proof of facsimiles to qualified MBEs and WBEs listed in the M/W/DBE Kansas City Mo. Online Directory.

- C. A Bidder will be required to give the City documentation to prove that it made good faith efforts. The Bidder will be contacted by the City with further instructions about when this documentation must be submitted.

IX. Modification of the Contractor Utilization Plan or Substitution of an MBE/WBE.

- A. After bid opening, a Bidder or Contractor may need to substitute an MBE and/or WBE or request that the amount of MBE/WBE participation listed in its Contractor Utilization Plan be modified. Bidder or Contractor must file a **Request for Modification or Substitution (HRD Form 11) prior to actual substitution and within a reasonable time after learning that a modification or substitution is necessary.** The Director may approve substitutions or modifications and upon approval, the modifications and substitutions will become an amendment to the Contractor Utilization Plan. Modifications or substitutions may be approved when:

- 1. The Director finds that the Bidder or Contractor made and provided evidence of good faith efforts to substitute the MBE/WBE listed on the Contractor Utilization Plan with other certified MBE/WBEs for the scope of work or any other scope of work in the contract; AND
- 2. The Director also finds one of the following:
 - a. The listed MBE/WBE is non-responsive or cannot perform; or
 - b. The listed MBE/WBE has increased its previously quoted price to the bidder, proposer or contractor without a corresponding change in the scope of the work; or
 - c. The listed MBE/WBE has committed a material default or breach of its contract with the contractor; or
 - d. Requirements of the scope of work of the contract have changed and render subcontracting not feasible or not feasible at the levels required by the goals established for the contract; or
 - e. The listed MBE/WBE is unacceptable to the contracting department; or
 - f. The listed MBE/WBE thereafter had its certification revoked; or
 - g. The Bidder or Contractor has not attempted intentionally to evade the requirements of the Program and it is in the best interests of the City to allow a modification or substitution.

- B. A modification shall not be made unless the modification or substitution has first been requested and approved by the Director.

X. Appeals.

- A. In conformance with the Act, appeals may be made to the City Fairness in Construction Board on the following:
 - 1. The grant or denial of a Request for Waiver;

2. Substitution for an MBE/WBE listed on a Contractor Utilization Plan;
 3. Modification of the percentage of MBE/WBE participation on a Contractor Utilization Plan;
 4. Liquidated Damages;
 5. The amount of MBE/WBE credit the Contractor may receive for MBE/WBE participation identified in the contractor utilization plan.
- B. Any appeal must be filed in writing with the Director within ten (10) working days of notice of the determination. Mailing, faxing, personal delivery or posting at HRD of determinations shall constitute notice. The appeal shall state with specificity why the Bidder or Contractor believes the determination is incorrect
- C. Failure to file a timely appeal shall constitute a waiver of a Bidder's or Contractor's right to appeal such determination and such person shall be estopped to deny the validity of any determination which could have been timely appealed.

XI. Access to Documents and Records.

- A. By submitting a Bid, each Bidder agrees to permit the City, its duly authorized agents or employees, access at all reasonable times to all books and business records of Bidder as may be necessary to ascertain compliance with the requirements of this document and the Act, within ten (10) days of the date of the written request.
- B. All Bidders agree to cooperate with the contracting department and HRD in studies and surveys regarding the MBE/WBE program.

XII. Miscellaneous.

- A. A Bidder or Contractor shall bear the burden of proof with regard to all issues on appeal.
- B. In the event of any conflict between this document and the Program, the provisions of the Program shall control. The terms used in this document are defined in the Program.
- C. Oral representations are not binding on the City.
- D. The City Council may waive the requirements of this document and the Program and award the contract to the lowest and best bidder if the City Council determines a waiver is in the best interests of the City.
- E. The Director may grant extensions of time to Bidders to submit Letters of Intent to Subcontract (HRD Form 00450.01).

XIII. Liquidated Damages – MBE/WBE Program.

- A. If Contractor fails to achieve the MBE/WBE goals stated in its Contractor Utilization Plan, as amended, the City will sustain damages, the exact extent of which would be difficult or impossible to ascertain. Therefore, in order to liquidate those damages, the monetary difference between the amount of the MBE/WBE goals set forth in the Contractor Utilization Plan, as amended, and the amount actually paid to qualified MBEs and WBEs for performing a commercially useful function will be deducted from the Contractor's payments as liquidated damages. In determining the amount actually paid to qualified MBEs and WBEs, no credit will be given for the portion of participation that was not approved by the Director, unless the Director determines that the Contractor

acted in good faith. No deduction for liquidated damages will be made when, for reasons beyond the control of the Contractor, the MBE/WBE participation stated in the Contractor Utilization Plan, as amended and approved by the Director is not met.

PART B. CONSTRUCTION EMPLOYMENT PROGRAM REQUIREMENTS

(THIS PART IS APPLICABLE TO CITY CONSTRUCTION CONTRACTS ESTIMATED BY THE CITY PRIOR TO SOLICITATION AS REQUIRING MORE THAN 800 CONSTRUCTION LABOR HOURS AND COSTING IN EXCESS OF \$324,000.00.)

I. City's Construction Employment Program.

- A. The City has adopted a Construction Employment Program (Sections 3-501 through 3-525, Code of Ordinances) (the "Program") to implement the City's policy of supporting the fullest possible utilization of minority and women workers in the construction industry. A person or firm who is awarded a contract to construct, reconstruct, improve, enlarge or alter any fixed work that is estimated by the City prior to solicitation as requiring more than 800 construction labor hours, has an estimated costs that exceeds \$324,000.00, and involves the expenditure of public funds, is subject to company-wide construction employment goals. The minimum goals are currently set at 10% for minorities and 2% for women, but public recognition may be provided if the bidder achieves at least twice the minimum participation. The successful bidder may meet these company-wide goals by counting the bidder's utilization of minorities and women throughout the Kansas City metropolitan statistical area.
- B. These Human Relations Department ("HRD") Forms & Instructions are part of the BIDDING DOCUMENTS and CONTRACT DOCUMENTS as defined in the General Conditions. By submitting a Bid, the Bidder agrees, as a material term of the contract, to carry out the City's Construction Employment Program by making good faith efforts to utilize minority and women workers on the Contractor's job sites to the fullest extent consistent with submitting the lowest and best bid to the City. Bidder agrees that the Program is incorporated into this document and agrees to follow the Program. Although it is not a requirement that a Bidder in fact meet or exceed the construction employment goals to receive approval from HRD, a Bidder not doing so is required to objectively demonstrate to HRD that good faith efforts have been made.
- C. The following HRD Forms are to be used for Construction Employment Program submittals:
 1. Project Workforce Monthly Report (HRD Form 00485.02)
 2. Company-Wide Workforce Monthly Report (HRD Form 00485.03)

II. Required Monthly Submissions during Term of Contract.

- A. Bidder must submit the following documents on a monthly basis if awarded the contract:
 1. **Project Workforce Monthly Report (HRD Form 00485.02).** This report is contract specific. Two copies of this report must be submitted to the Director by the 15th of each month. The first copy will be utilized to report the Contractor's own workforce compliance data with regard to the City's construction contract. The second copy will be utilized to report consolidated workforce compliance data for every subcontractor retained by Contractor on the City's construction contract.

Failure to submit timely reports may result in delays in processing of current and future contract approvals and payment applications.

2. **Company-Wide Workforce Monthly Report (HRD Form 00485.03).** This report is not contract specific; it is used to report on the utilization of females and minorities, by trade, company-wide. Two copies of this report must be submitted to the Director by the 15th of each month. The first copy will be utilized to report the Contractor's own workforce compliance data with regard to every contract (both privately and publicly funded) Contractor has in progress throughout the Kansas City metropolitan statistical area. The second copy will be utilized to report consolidated workforce compliance data for every subcontractor retained by Contractor on every contract Contractor has in progress throughout the Kansas City metropolitan statistical area. Failure to submit timely reports may result in delays in processing of current and future contract approvals and payment applications.

III. Submittal Required for Final Contract Payment.

- A. The last Project Workforce Monthly Report(s) and Company-Wide Workforce Monthly Report(s) shall serve as the final reports and must be submitted before final payment will be made and/or retainage released. Contractor shall note the submittal of the final reports by notation in the box entitled "Final Cumulative Report"

IV. Methods for Securing Workforce Participation and Good Faith Efforts.

- A. A bidder is required to make good faith efforts to achieve the construction employment goals. If a Bidder will be unable to secure enough minority and female participation to meet or exceed the construction employment goals, a bidder must, within a reasonable time after so learning, request a waiver or modification of the goals by the Director of HRD. The Director will examine the Bidder's request and the Bidder's documentation of good faith efforts and grant or deny a waiver or modification. The Director will grant a waiver or modification only if the Bidder has made good faith efforts to secure minority and female participation.
- B. In evaluating good faith efforts, the Director will consider whether the Bidder has performed the following:
 1. For those bidders that are not signatories to a collective bargaining agreement with organized labor:
 - a. Requested in writing the assistance of the Director with respect to efforts to promote the utilization of minorities and women in the workforce and acted upon the Director's recommendations; and
 - b. Advertised in minority or women trade association newsletters and/or minority or women owned media at least 15 calendar days prior to the utilization of any construction services on the city construction contract and used terminology that sufficiently describes the work available, the pay scale, the application process, and anything else that one might reasonably be expected to be informed of relevant to the position being advertised; and
 - c. Maintained copies of each advertisement and a log identifying the publication and date of publication; and

- d. Conducted real and substantial recruitment efforts, both oral and written, targeting resident, minority and women community-based organization, schools with a significant minority student population, and training organizations serving the recruitment area; and
 - e. Established and maintained a current list of resident, minority and women recruitment sources, providing written notification to the recruitment sources of available employment opportunities, and maintained records of the notices submitted to the organizations and any responses thereto; and
 - f. Maintained a current file for the time period of the city construction contract with the name, address, and telephone number of each resident, minority and woman job applicant, the source of the referral, whether or not the person was hired, and in the event that the applicant was not hired, the reason therefore; and
 - g. Promoted the retention of minorities and women in its workforce with the goals of achieving sufficient annual hours for minorities and women to qualify for applicable benefits; and
 - h. Required by written contract that all subcontractors comply with the above efforts.
2. For those bidders that are signatories to collective bargaining agreements with organized labor:
 - a. Supported the efforts of the Joint Apprenticeship Training Committee (JATC), a joint effort of Labor Unions and contractors, or some other apprenticeship program, whose purpose is to recruit, train and employ new workers for a full time career in the construction industry; and
 - b. Requested in writing from each labor union representing crafts to be employed that:
 - i. the labor union make efforts to promote the utilization of residents of the City, minorities and women in the workforce; and
 - ii. the labor union identify any residents of the City, minorities and women in its membership eligible for employment; and
 - iii. the JATC take substantial and real steps to increase the participation of minorities in the union apprenticeship programs in the aggregate to 30% by 2011 and encourage other labor unions to do the same; and
 - iv. the JATC take substantial and real steps to increase the participation of women in the union apprenticeship programs in the aggregate to 5% by 2011 and encourage other labor unions to do the same; and
 - v. the JATC partner with workforce preparedness programs, community based organizations, employment referral programs and school-sponsored programs to accomplish these goals.
 - c. Collaborated with labor unions in promoting mentoring programs intended to assist minorities and women in increasing retention with the goals of

achieving sufficient annual hours to qualify for applicable benefits; and

- d. Maintained a current file with the name, address, and telephone number of each resident, minority and women worker identified by the labor union, whether or not the person was hired, and in the event the person was not hired, the reason therefore.
 - e. To the extent the good faith efforts applicable to bidders that are signatories to collective bargaining agreements with organized labor conflict with the procedures implemented by the bidder in order to comply with the relevant bargaining agreement, the bidder shall substitute other procedures as may be approved by the Director in writing.
- C. A Bidder will be required to give the City documentation to prove that it made good faith efforts. The Bidder will be contacted by the City with further instructions about when this documentation must be submitted.

V. Appeals.

- A. In conformance with the Program, appeals may be made to the Construction Workforce Board on the following:
 1. Determinations by the Director that a contractor did not meet the construction employment goals and did not make a good faith effort to meet the goals;
 2. Recommendations by the Director to assess liquidated damages;
 3. Recommendation by the Director that a contractor be declared ineligible to receive any city construction contract for a period of time up to one year.
- B. Any appeal must be filed in writing with the Director within ten (10) working days of notice of the recommendation or determination. The appeal shall state with specificity why the Bidder or Contractor believes the recommendation or determination is incorrect.
- C. Failure to file a timely appeal shall constitute a waiver of a Bidder's or Contractor's right to appeal such determination or recommendation and such person shall be estopped to deny the validity of any order, determination, recommendation or action of HRD which could have been timely appealed.

VI. Access to Documents and Records.

- A. By submitting a Bid, each Bidder agrees to permit the City, its duly authorized agents or employees, access at all reasonable times to all books and business records of Bidder as may be necessary to ascertain compliance with the requirements of this document and the Program, within ten (10) days of the date of the written request. Each bidder further agrees to require, if awarded the contract, that every subcontractor permit the City the same access to documents and records.
- B. All Bidders agree to cooperate with the contracting department and HRD in studies and surveys regarding the construction employment program.

VII. Miscellaneous.

- A. A Bidder or Contractor shall bear the burden of proof with regard to all issues on appeal.
- B. The successful bidder may be required to meet with the Director of HRD or the

Director's designee for the purpose of discussing the construction employment program, the bidder's efforts to realize the goals, and any other problems and/or issues affecting the realization of the goals or the program in general.

- C. In the event of any conflict between this document and the Program, the provisions of the Program shall control. The terms used in this document are defined in the Program.
- D. Oral representations are not binding on the City.

VIII. Liquidated Damages; Suspension – Workforce Program.

- A. If Contractor fails to achieve the construction employment goals without having previously obtained a waiver or modification of those goals, the City will sustain damages, the exact extent of which would be difficult or impossible to ascertain. These damages are magnified if the failure to abide by the requirements of the Workforce Program is recurring. Therefore, in order to liquidate those damages, City shall be entitled to deduct and withhold the following amounts:

If Contractor failed to meet or exceed the minimum employment goals or otherwise establish that Contractor is entitled to a waiver under circumstances in which Contractor has failed to meet or exceed the goals on one prior occasion within the twenty-four month period immediately preceding the completion of the work under the Contract, the sum of three thousand dollars (\$3,000.00).

If Contractor failed to meet or exceed the minimum employment goals or otherwise establish that Contractor is entitled to a waiver under circumstances in which Contractor has failed to meet or exceed the goals on two or more prior occasions within the twenty-four month period immediately preceding the completion of the work under the Contract, the sum of seven thousand dollars (\$7,000.00).

- B. In addition, Contractor shall be required to attend mandatory compliance training or be declared ineligible to contract with the City for a term provided herein, and as authorized by City's Code of Ordinances:

If Contractor failed to meet or exceed the minimum employment goals or otherwise establish that Contractor is entitled to a waiver under circumstances in which Contractor has not previously failed to meet or exceed the goals within the twenty-four month period immediately preceding the completion of the work under the Contract, Contractor shall be required to attend a mandatory training class on Workforce Program compliance.

If Contractor failed to meet or exceed the minimum employment goals or otherwise establish that Contractor is entitled to a waiver under circumstances in which Contractor has failed to meet or exceed the goals on one prior occasion within the twenty-four month period immediately preceding the completion of the work under the Contract, Contractor shall be suspended from participating, either as a contractor or subcontractor, on any future contract with the City for a period of thirty (30) days. Contractor waives any right to invoke any proceeding or procedure under Section 3-321 of City's Code of Ordinances with regards to any suspension arising hereunder.

If Contractor failed to meet or exceed the minimum employment goals or otherwise establish that Contractor is entitled to a waiver under circumstances in which Contractor has failed to meet or exceed the goals on two or more prior occasions within the twenty-four month period immediately preceding the completion of the work under the Contract, Contractor shall be suspended from participating, either as a contractor or subcontractor, on any future contract with the City for a period of six (6) months. Contractor waives any right to invoke any proceeding or procedure under Section 3-321 of City's Code of Ordinances with regards to any suspension arising hereunder.

IX. First Source Program

- A. The City has established a labor force recruiting program intended to assist contractors in identifying, interviewing and hiring qualified job applicants residing in Kansas City, Missouri. While the contractor awarded a City construction contract is not prohibited from hiring persons residing outside Kansas City, Missouri, the recruiting resource provided for herein (the "First Source Program") must be utilized by the contractor subject to the construction employment goals as set forth in this **PART B, CONSTRUCTION EMPLOYMENT PROGRAM REQUIREMENTS**.
- B. The City utilizes the services of the Full Employment Council, Inc., to administer the First Source Program. The contractor shall contact the Full Employment Council within 48 hours of contract award, regardless of whether the contractor has any hiring needs at that time, and within 48 hours following any job vacancy which the contractor reasonably anticipates filling during the term of the City construction contract. The contractor shall comply with the First Source Program requirements as implemented by the Full Employment Council unless otherwise excused in writing by the Director of HRD for good cause shown. To ensure compliance with the First Source Program, the contractor shall contact those persons at the Full Employment Council responsible for administering the program, which may be identified by visiting their website at www.feckc.org and clicking on the link for KCMO First Source Hiring Program. The contractor shall not hire any individual to provide construction services on a City construction contract unless the contractor has met the requirements of the First Source Program.
- C. The contractor shall require that its subcontractors utilize the First Source Program to the same extent that the contractor is required to do so, and shall incorporate the requirements of this Section IX into every subcontract. Every subcontractor shall be required to contact the Full Employment Council within 48 hours of subcontract award, regardless of whether the subcontractor has any hiring needs at that time, and within 48 hours following any job vacancy which the subcontractor reasonably anticipates filling during the term of their subcontract on a City construction project.

CONTRACTOR UTILIZATION PLAN/REQUEST FOR WAIVER

Project Number 07061111

Project Title KCMO ADA Compliance, Community Centers

Parks & Recreation, Community Centers
(Department Project)

Parks & Recreation
Department

BKM-IEC
(Bidder/Proposer)

STATE OF Missouri)
) ss

COUNTY OF Jackson)

I, Brent Motley, of lawful age and upon my oath state as follows:

1. This Affidavit is made for the purpose of complying with the provisions of the MBE/WBE submittal requirements on the above project and the MBE/WBE Program and is given on behalf of the Bidder/Proposer listed below. It sets out the Bidder/Proposer's plan to utilize MBE and/or WBE contractors on the project.
2. The project goals are 15% MBE and 7% WBE. Bidder/Proposer assures that it will utilize a minimum of the following percentages of MBE/WBE participation in the above project:

BIDDER/PROPOSER PARTICIPATION: 16% MBE 7% WBE

3. The following are the M/WBE subcontractors whose utilization Bidder/Proposer warrants will meet or exceed the above-listed Bidder/Proposer Participation. Bidder/Proposer warrants that it will utilize the M/WBE subcontractors to provide the goods/services described in the applicable Letter(s) of Intent to Subcontract, copies of which shall collectively be deemed incorporated herein). *(All firms must currently be certified by Kansas City, Missouri)*

- a. Name of M/WBE Firm: Infinite Energy (electrical, fire alarm, construction mgt.)
Address 13625 Oak Street, Kansas City, MO 64145
Telephone No. 816-763-7471
I.R.S. No. FEIN 43-1750121

- b. Name of M/**WBE** Firm: Gunter Construction Company.
 Address: 520 Division Street, Kansas City, KS 66103
 Telephone No. 913-362-7844
 I.R.S. No. FEIN 43-1596391
- c. Name of M/WBE Firm _____
 Address _____
 Telephone No. _____
 I.R.S. No. _____
- d. Name of M/WBE Firm _____
 Address _____
 Telephone No. _____
 I.R.S. No. _____
- e. Name of M/WBE Firm _____
 Address _____
 Telephone No. _____
 I.R.S. No. _____
- f. Name of M/WBE Firm _____
 Address _____
 Telephone No. _____
 I.R.S. No. _____

(List additional M/WBEs, if any, on additional page and attach to this form)

4. The following is a breakdown of the percentage of the total contract amount that Bidder/Proposer agrees to pay to each listed M/WBE:

MBE/WBE BREAKDOWN SHEET

MBE FIRMS:

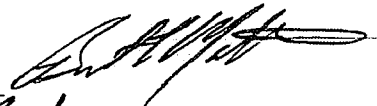
Name of MBE Firm	Supplier/Broker/Contractor	Subcontract Amount*	Weighted Value**	% of Total Contract
<u>Infinite Energy</u>	<u>Contractor</u>	\$ 126,055.00	16%	16%
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

contract amount may correspondingly increase the amount of compensation due an M/WBE for purposes of meeting or exceeding the Bidder/Proposer participation

6. Bidder/Proposer acknowledges that it is responsible for considering the effect that any change orders and/or amendments changing the total contract amount may have on its ability to meet or exceed the Bidder/Proposer participation. Bidder/Proposer further acknowledges that it is responsible for submitting a Request for Modification or Substitution if it will be unable to meet or exceed the Bidder/Proposer participation set forth herein.
7. If Bidder/Proposer has not achieved both the M/WBE goal(s) set for this Project, Bidder/Proposer hereby requests a waiver of the MBE and/or WBE goal(s) that Bidder/Proposer has failed to achieve
8. Bidder/Proposer will present documentation of its good faith efforts, a narrative summary detailing its efforts and the reasons its efforts were unsuccessful when requested by the City.
9. I hereby certify that I am authorized to make this Affidavit on behalf of the Bidder/Proposer named below and who shall abide by the terms set forth herein:

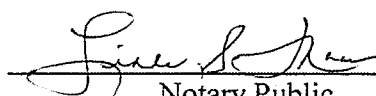
Bidder/Proposer primary contact: Brent Motley
Address: 13625 Oak Street, Kansas City, MO 64145

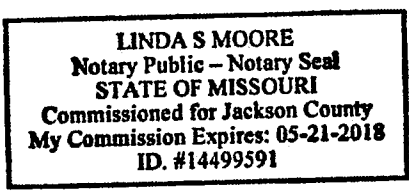
Phone Number: 913-832-4393
Facsimile number: _____
E-mail Address: bmotley@bkmconstructionllc.com

By: Brent Motley 
Title: Managing Partner
Date: 21 May 15
(Attach corporate seal if applicable)

Subscribed and sworn to before me this 21st day of MAY, 2015.

My Commission Expires: 5-21-18


Notary Public



ID #1499291
My Commission Expires: 02-21-2018
Commissioned for Jackson County
STATE OF MISSOURI
Notary Public - Notary Seal
LINDA S MOORE



LETTER OF INTENT TO SUBCONTRACT

Project Number 07061111

Project Title KCMO ADA #6 Compliance, Community Centers

BKM-IEC ("Prime Contractor") agrees to enter into a contractual

agreement with Gunter Construction Company ("M/W/DBE Subcontractor"), who will

provide the following goods/services in connection with the above-referenced contract:

(Insert a brief narrative describing the goods/services to be provided. Broad categorizations (e.g., "electrical," "plumbing," etc.) or the listing of the NAICS Codes in which M/W/DBE Subcontractor is certified are insufficient and may result in this Letter of Intent to Subcontract not being accepted.)

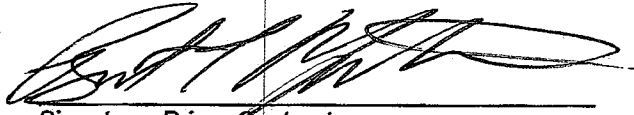
Select demolition, excavation, preparation required for exterior concrete walkway, curb, ramps and associated features including erosion controls, complete, as indicated/required.

Provide and install complete, exterior concrete walkway, curb, ramps and associated features including sod repair of disturbed areas.

Select demolition, excavation, preparation required for exterior asphalt paving and associated features including erosion controls, complete, as indicated/required.

for an estimated amount of \$63,225 or 7% of the total estimated contract value.

M/W/DBE Subcontractor is, to the best of Prime Contractor's knowledge, currently certified with the City of Kansas City's Human Relations Department to perform in the capacities indicated herein. Prime Contractor agrees to utilize M/W/DBE Subcontractor in the capacities indicated herein, and M/W/DBE Subcontractor agrees to work on the above-referenced contract in the capacities indicated herein, contingent upon award of the contract to Prime Contractor.



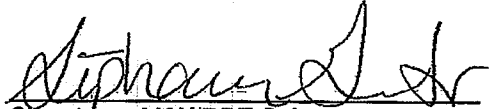
Signature: Prime Contractor
Brent L. Motley

Print Name
Managing Partner

05/21/2015

Title

Date



Signature: M/W/DBE Subcontractor

Stephanie Gunter

Print Name

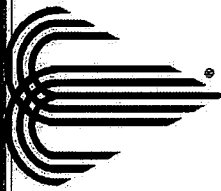
VP

5/21/15

Title

Date

FEIN 43-1596391



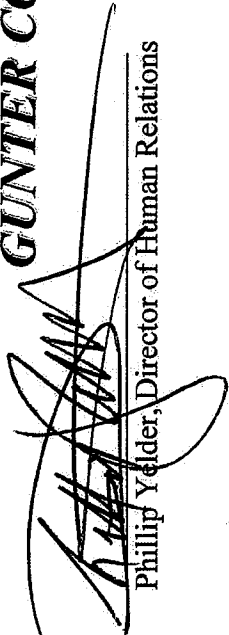
KANSAS CITY
MISSOURI

CITY OF KANSAS CITY, MISSOURI

Human Relations Department
414 E. 12th Street, 4th Floor
Kansas City, Missouri 64106
(816) 513-1810 Phone
(816) 513-1805 Fax

In accordance with the requirements for certification as a Women Business Enterprise (WBE) as defined by Chapter 3 Code of General Ordinance it has been determined that your firm does qualify for participation in the WBE Program. The work performed by your firm will only count toward contractual WBE goals. The Department will monitor the operations of your firm to ensure that it continues to operate in compliance with the regulations and intent of the WBE program.

GUNTER CONSTRUCTION COMPANY


Phillip Yelder, Director of Human Relations

Date Issued: August 22, 2014

Annual Update Forms are available online at www.kcmo.org

Certification Codes:

NAICS 237310
NAICS 238110
NAICS 238910

Construction Management – (Highway, Road, Street, Bridge)
Poured Concrete Contractors
Excavation Contractors

PLEASE NOTE: Each year you must provide an Annual Update Form 60 days prior to your certification anniversary date.
03/12



LETTER OF INTENT TO SUBCONTRACT

Project Number 07061111

Project Title KCMO ADA Compliance, Community Centers

BKM-IEC ("Prime Contractor") agrees to enter into a contractual agreement with Infinite Energy ("M/W/DBE Subcontractor"), who will provide the following goods/services in connection with the above-referenced contract:

(Insert a brief narrative describing the goods/services to be provided. Broad categorizations (e.g., "electrical," "plumbing," etc.) or the listing of the NAICS Codes in which M/W/DBE Subcontractor is certified are insufficient and may result in this Letter of Intent to Subcontract not being accepted.)

Select demolition, provide and install electrical and fire alarm as indicated/required to execute the scope of work including relocation of electrical circuits, boxes, devices. Site construction management.

for an estimated amount of \$126,055.00 or 16% of the total estimated contract value.

M/W/DBE Subcontractor is, to the best of Prime Contractor's knowledge, currently certified with the City of Kansas City's Human Relations Department to perform in the capacities indicated herein. Prime Contractor agrees to utilize M/W/DBE Subcontractor in the capacities indicated herein, and M/W/DBE Subcontractor agrees to work on the above-referenced contract in the capacities indicated herein, **contingent upon award of the contract to Prime Contractor.**

Signature: Prime Contractor
Brent L. Motley

Print Name
Managing Partner 05/21/2015

Title Date

Signature: M/W/DBE Subcontractor 21/05/15

Print Name
Proscia Manacca

Proscia Manacca 21/05/15
Title Date

CITY OF FOUNTAINS
HEART OF THE NATION



KANSAS CITY
MISSOURI

August 26, 2014

Human Relations Department

4th Floor, City Hall
414 East 12th Street
Kansas City, Missouri 64106

(816) 513-1836
(816)513-1805 fax

NILSON GOEZ
Infinite Energy Construction, Inc. DBA Progress Electric
13625 Oak St.
Kansa City, MO 64145

Dear NILSON GOEZ:

The City of Kansas City, Missouri Human Relations Department has completed the review of your Annual Update as a Minority Business Enterprise (MBE). We have determined that your firm shall remain certified until August 26, 2015.

Your firm is listed in our online directory on the webpage of the Human Relations Department at www.kcmo.org. Please review your listing to ensure that all of the information is accurate. Contact us immediately if any changes are necessary. Each year on the anniversary date of your certification, you must provide an Annual Update Form. FAILURE TO PROVIDE REQUIRED DOCUMENTS WILL LEAD TO AN IMMEDIATE REMOVAL FROM THE MBE/SLBE PROGRAMS.

NAICS-236210: CONSTRUCTION MANAGEMENT, INDUSTRIAL BUILDING (EXCEPT WAREHOUSES)
NAICS-236220: CONSTRUCTION MANAGEMENT, COMMERCIAL AND INSTITUTIONAL BUILDING
NAICS-238210: COMPUTER AND NETWORK CABLE INSTALLATION
NAICS-238210: ELECTRIC POWER CONTROL PANEL AND OUTLET INSTALLATION
NAICS-238210: ELECTRICAL CONTRACTORS
NAICS-238210: ELECTRICAL WIRING CONTRACTORS
NAICS-238210: ELECTRONIC CONTROL SYSTEM INSTALLATION
NAICS-238210: LIGHTING SYSTEM INSTALLATION
NAICS-423610: CONSTRUCTION MATERIALS, ELECTRICAL, MERCHANT WHOLESALERS

We will describe your firm in the following way in our directory of certified firms:

This company provides Electrical Construction services and Construction Management services for commercial, institutional, and industrial building projects. The company is also a Distributor, Supplier, Merchant Wholesaler for Electrical Construction materials and equipment. Electricians - Construction Administration - Documents - Wiring - Controls - Design Services - Project Management - Automation - Computer Network Installation - Lighting Systems - Wire - Conduit - Connectors - Lighting Products - Receptacles - Switches - Cable.

This company has exceeded the SBA size standard for NAICS 238210 and has entered the 3-Year Graduation Period. This company will no longer receive credit for participation for that scope of work, Electrical Contractors, after August 26, 2017.

You must immediately notify this office of any events or changes related to the management, equipment, scope of work, or any other circumstances affecting the ownership and/or control of your firm. Failure to notify this office of such changes may jeopardize your certification. If you have any questions, please feel free to contact me at (816) 513-1836.

Sincerely,

Phillip Yelder
Director of Human Relations
City of Kansas City, Missouri

CITY OF FOUNTAINS
HEART OF THE NATION



KANSAS CITY
MISSOURI

Human Relations Department

4th Floor, City Hall
414 East 12th Street
Kansas City, Missouri 64106

(816) 513-1836
(816)513-1805 fax

August 26, 2014

NILSON GOEZ
Infinite Energy Construction, Inc. DBA Progress Electric
13625 Oak St.
Kansa City, MO 64145

Dear NILSON GOEZ:

The City of Kansas City, Missouri Human Relations Department, partner of the Missouri Regional Certification Committee (MRCC) has completed the review of your Annual Update as a Disadvantaged Business Enterprise (DBE). We have determined that your firm shall remain certified permanently, unless you withdraw, graduate or no longer meet the program requirements.

Your firm is listed in our online directory on the webpage of the Human Relations Department at www.kcmo.org. Additionally, your firm is listed in the Missouri Department of Transportation (MoDot) online directory at www.modot.mo.gov. This link is provided on the Human Relations Department webpage. Please review your listing to ensure that all of the information is accurate. Contact us immediately if any changes are necessary. Each year on the anniversary date of your certification, you must provide an Annual Update Form. FAILURE TO PROVIDE REQUIRED DOCUMENTS WILL LEAD TO AN IMMEDIATE REMOVAL FROM THE PROGRAM.

NAICS-236210: CONSTRUCTION MANAGEMENT, INDUSTRIAL BUILDING (EXCEPT WAREHOUSES)
NAICS-236220: CONSTRUCTION MANAGEMENT, COMMERCIAL AND INSTITUTIONAL BUILDING
NAICS-423610: CONSTRUCTION MATERIALS, ELECTRICAL, MERCHANT WHOLESALERS

We will describe your firm in the following way in our directory of certified firms:

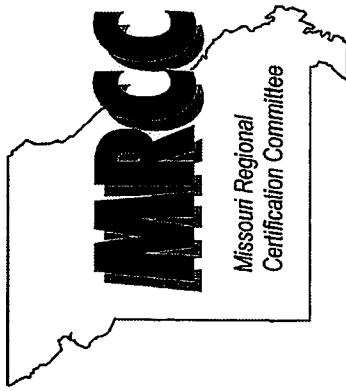
This company provides Construction Management services for commercial, institutional, and industrial building projects. The company is also a Distributor, Supplier, Merchant Wholesaler for Electrical Construction materials and equipment. - Construction Administration - Documents - Wiring - Controls - Design Services - Project Management - Automation - Computer Network Installation - Lighting Systems - Wire - Conduit - Connectors - Lighting Products - Receptacles - Switches - Cable

You must immediately notify this office of any events or changes related to the management, equipment, scope of work, or any other circumstances affecting the ownership and/or control of your firm. Failure to notify this office of such changes may jeopardize your certification. If you have any questions, please feel free to contact me at (816) 513-1836.

Sincerely,

Phillip Yelder
Director of Human Relations
City of Kansas City, Missouri

Missouri Regional Certification Committee



- * Metro
- * City of St. Louis
- * City of Kansas City
- * Kansas City Area Transportation Authority
- Missouri Department of Transportation
- East-West Gateway Council of Governments

In accordance with the requirements for certification as a Disadvantaged Business Enterprise (DBE) as defined by the U.S. Department of Transportation's 49 CFR Part 26, the Missouri Regional Disadvantaged Business Enterprise Unified Certification Program presents this DBE Certificate to:

INFINITE ENERGY CONSTRUCTION, INC. D/B/A PROGRESS ELECTRIC


Phillip Yeider, Director, Human Relations

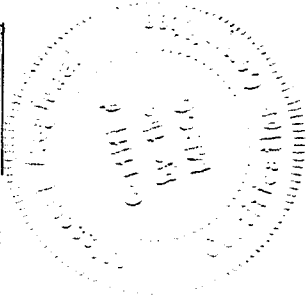
Date Issued: August 26, 2014

Certification Codes:

Construction Management – Industrial Buildings
Construction Management – Commercial & Institutional
Electrical Construction Materials Merchant Wholesalers

NAICS 236210
NAICS 236220
NAICS 423610

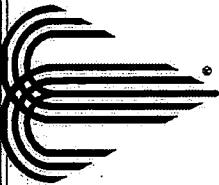
Annual Report Forms are available online at www.kcimo.org



You are responsible for submitting your annual paperwork 60 days prior to expiration.



Handwritten text, possibly a signature or date, located in the lower-left quadrant of the page.



KANSAS CITY
MISSOURI

CITY OF KANSAS CITY, MISSOURI

Human Relations Department
414 E. 12th Street, 4th Floor
Kansas City, Missouri 64106
(816) 513-1810 Phone
(816) 513-1805 Fax

In accordance with the requirements for certification as a Minority Business Enterprise (MBE) as defined by Chapter 3 Code of General Ordinance it has been determined that your firm does qualify for participation in the MBE Program. The work performed by your firm will only count toward contractual MBE goals. The Department will monitor the operations of your firm to ensure that it continues to operate in compliance with the regulations and intent of the MBE program.

INFINITE ENERGY CONSTRUCTION, INC. D/B/A PROGRESS ELECTRIC


Phillip Yelder, Director of Human Relations

Date Issued: August 26, 2014

Certification Codes:

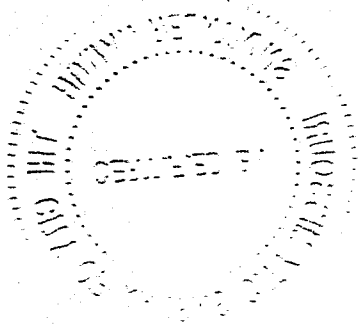
Electrical Contractors
Construction Management – Industrial Buildings
Construction Management – Commercial & Institutional
Electrical Construction Materials Merchant Wholesalers

Annual Update Forms are available online at www.kcmo.org

NAICS 238210
NAICS 236210
NAICS 236220
NAICS 423610

This company has exceeded the SBA size standard for NAICS 238210 and has entered the 3-Year Graduation Period. This company will no longer receive credit for participation for that scope of work, Electrical Contractors, after August 26, 2017.

PLEASE NOTE: Each year you must provide an Annual Update Form 60 days prior to your certification anniversary date.
03/12



TIMETABLE FOR MBE/WBE UTILIZATION

(This form should be submitted to the City after contract award.)

I, _____, acting in my capacity as _____
 _____ (Name) _____ (Position with Firm)
 of _____, with the submittal of this Timetable, certify that
 _____ (Name of Firm)
 the following timetable for MBE/WBE utilization in the fulfillment of this contract is correct and true to the best of my knowledge.

ALLOTTED TIME FOR THE COMPLETION OF THIS CONTRACT

(Check one only)

15 days	_____	75 days	_____	135 days	_____
30 days	_____	90 days	_____	150 days	_____
45 days	_____	105 days	_____	165 days	_____
60 days	_____	120 days	_____	180 days	_____
Other	_____ (Specify)				

Throughout _____	Beginning 1/3 _____	
Middle 1/3 _____	Final 1/3 _____	
Beginning 1/3 _____%	Middle 1/3 _____%	Final 1/3 _____%

PLEASE NOTE: Any changes in this timetable require approval of the Human Relations Department in advance of the change.

If you have any questions regarding the completion of this form, please contact the Department of Human Relations at: (816) 513-1818.

(Signature)

(Position with Firm)

(Date)



REQUEST FOR MODIFICATION OR SUBSTITUTION

(This Form must be submitted to HRD to request substitutions for an MBE/WBE listed in the Contractor Utilization Plan or for modification of the amount of MBE/WBE participation listed in the Contractor Utilization Plan. This Form shall be an amendment to the Contractor Utilization Plan.)

BIDDER/PROPOSER/CONTRACTOR: _____
ADDRESS: _____
PROJECT NUMBER OR TITLE: _____
AMENDMENT/CHANGE ORDER NO: (if applicable) _____

Project Goals: _____ % MBE _____ % WBE
Contractor Utilization Plan: _____ % MBE _____ % WBE

1. I am the duly authorized representative of the above Bidder/Contractor/Proposer and am authorized to request this substitution or modification on behalf of the Bidder/Contractor/Proposer.

2. I hereby request that the Director of HRD recommend or approve: (check appropriate space(s))

a. _____ A substitution of the certified MBE/WBE firm _____,
(Name of new firm)
to perform _____,
(Scope of work to be performed by new firm)

for the MBE/WBE firm _____ which is currently
(Name of old firm)
listed on the Bidder's/Contractor's/Proposer's Contractor Utilization Plan to
perform the following scope of work: _____.
(Scope of work of old firm)

b. _____ A modification of the amount of MBE/WBE participation currently listed on the Bidder's/Contractor's/Proposer's Contractor Utilization Plan from
_____ % MBE _____ % WBE *(Fill in % of MBE/WBE Participation currently listed on Contractor Utilization Plan)*

TO

_____ % MBE _____ % WBE *(Fill in New % of MBE/WBE Participation requested for Contractor Utilization Plan)*

- c. Attach 00450.01 Letter of Intent to Subcontract letter for each new MBE/WBE to be added.
- d. Attach a copy of the most recent 00485.01 or on-line M/WBE Monthly Utilization Report

3. Bidder/Contractor/Proposer states that a substitution or modification is necessary because: (check applicable reason(s))

___ The MBE/WBE listed on the Contractor Utilization Plan is non-responsive or cannot perform.

___ The MBE/WBE listed on the Contractor Utilization Plan has increased its previously quoted price without a corresponding change in the scope of work.

___ The MBE/WBE listed on the Contractor Utilization Plan has committed a material default or breach of its contract.

___ Requirements of the scope of work of the contract have changed and make subcontracting not feasible or not feasible at the levels required by the goals established for the contract.

___ The MBE/WBE listed on the Contractor Utilization Plan is unacceptable to the City contracting department.

___ Bidder/Contractor/Proposer has not attempted intentionally to evade the requirements of the Act and it is in the best interests of the City to allow a modification or substitution.

- 4. The following is a narrative summary of the Bidder's/Contractor's/Proposer's good faith efforts exhausted in attempts to substitute the MBE/WBE firm named above which is currently listed on the Contractor Utilization Plan with other qualified, certified MBE/WBE firms for the listed scope of work or any other scope of work in the project:

- 5. Bidder/Proposer/Contractor will present documentation when requested by the City to evidence its good faith efforts.

Dated: _____

(Bidder/Proposer/Contractor)

By: _____
(Authorized Representative)



HRD Request for Modification or Substitution Approval

Date: _____
 To: _____, Human Relations Department
 From: _____, _____ Department
 Subject: Contract/Project No.: _____
 Project Title: _____

<input type="checkbox"/> Amendment No. _____ <input type="checkbox"/> Change Order No. _____ (See Contract Summary on the next page.) <input type="checkbox"/>	
Funding: <input type="checkbox"/> City (MBE/WBE/DBE) <input type="checkbox"/> Federal (DBE) ¹ <input type="checkbox"/> State (DBE) ¹ - Grant _____ <input type="checkbox"/> Other:	
Contract Category: <input type="checkbox"/> Construction <input type="checkbox"/> General Service <input type="checkbox"/> Facility Repair <input type="checkbox"/> Design Professional <input type="checkbox"/> Professional Services <input type="checkbox"/> Concession <input type="checkbox"/> Other:	
Company: Contact: Contact Email:	Address: Phone: Fax:
Additional Information: 	

cc: Project Manager

FOR HUMAN RELATIONS DEPARTMENT USE ONLY	
The attached <u>Request for Modification or Substitution</u> is:	
<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved	The Request for Best Faith Efforts Waiver is: <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Not Applicable
Contractor Utilization Plan Participation as Amended: _____% MBE & _____% WBE or _____% DBE	
_____	_____
Human Relations Department	Date

FOR GRANTING AGENCY USE ONLY² <input type="checkbox"/> N/A	
Approved by: _____	
_____	_____
	Date

¹ DBE Programs apply to specific federal or state grant requirements.

² Federal and state grant agreements may require granting agency approval of D/M/WBE participation changes.

CONTRACT SUMMARY³

Approved CUP:

_____% MBE
_____% WBE
_____% DBE

Original Contract Maximum Obligation: \$ _____
Amendment/Change Order No. 1: _____
Amendment/Change Order No. 2: _____
Amendment/Change Order No. 3: _____
Amendment/Change Order No. 4: _____
Amendment/Change Order No. 5: _____

Current Maximum Obligation: \$ _____

*Proposed Amendment/
Change Order No. _____* \$ _____

***Proposed Revised
Contract Maximum Obligation*** \$ _____

Attach a copy of the most recent 00485.01 M/WBE Monthly Utilization Report

³ The CONTRACT SUMMARY information should match information and calculations gathered and computed on the Contract Amendment or Change Order Preparation Checklist. The Checklist forms are found on Contract Central.

Inter-Departmental Communication

Date: June 16, 2015

To: Russ Johnson: Transportation and Infrastructure

From: Phillip Yelder, Director Human Relations Department

Subject: Docket Memo

CONTRACTOR:

Address: BKM-IEC LLC
13625 Oak Street.
Kansas City, MO 64145

Contract #: 0706111

Contract Name: ADA Compliance Project for Parks & Recreation -
Community Center Facilities

Contract Amount: \$903,201.00

MBE Goal: 15%

WBE Goal: 7%

Total MBE Achieved: 16%.

Total WBE Achieved: 7%

MBE SUBCONTRACTORS:

Name: Infinite Energy

Address: 13625 Oak Street
Kansas City, MO 64145

Scope of Work: Supply and Install Computer Software & Equip

Dollar Amount: \$144,512.00

Ownership: Nilson Goetz

Structure: Hispanic Male Code 03

WBE SUBCONTRACTORS:

Name: Gunter Construction

Address: 520 Division Street
Kansas City, KS 66103

Scope of Work: Consulting services and staffing

Dollar Amount: \$63,225.00

Ownership: Christine Gunter

Structure: Caucasian Female Code 02



HRD Contractor Utilization Plan Approval

Date: 5-27-2015
 To: Diane Hawkins, Human Relations Department
 From: Jenny Harriman, Project Manager, General Services
George Goodale, Contract Administrator, General Services Procurement
 Subject: Contract/Project No.: 07061111 -002 15-7-0
 Project Title: Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community

Center Facilities

Funding: <input checked="" type="checkbox"/> City (MBE/WBE/DBE) <input type="checkbox"/> Federal (DBE) ¹ <input type="checkbox"/> State (DBE) ¹ - Grant _____ <input type="checkbox"/> Other: _____	
Contract <input checked="" type="checkbox"/> Construction <input type="checkbox"/> General Service <input type="checkbox"/> Facility Repair Category: <input type="checkbox"/> Design Professional <input type="checkbox"/> Professional Services <input type="checkbox"/> Concession <input type="checkbox"/> Other: _____	
Bid/Proposal Closing Date: <u>5/19/2015</u>	No. of Bidders/Proposers: _____
Recommended Bid/Proposal²: \$903,201.00	
Vendor No. _____ Company: BKM-IEC Contact: Brent Motley Contact Email: bmotley@bkmconstructionllc.com	Address: 13625 Oak Street Kansas City, MO 64145 Phone: 913-832-4393 Fax: _____
Additional Information: _____	

FOR HUMAN RELATIONS DEPARTMENT USE ONLY The attached Contractor Utilization Plan is:		The Request for Best Faith Efforts Waiver is:
<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Not Applicable
Contractor Utilization Plan Participation: <u>16</u> % MBE & <u>7</u> % WBE or _____ % DBE		Date: <u>06/15/15</u>
_____ Human Relations Department		

FOR GRANTING AGENCY USE ONLY³ <input type="checkbox"/> N/A
Approved by: _____ Date: _____

¹ DBE Programs apply to specific federal or state grant requirements.
² The dollar figure here should match the approved Bid/Proposal recommendation or amendment preparation checklist on file with the requesting department.
³ Federal and state grant agreements may require granting agency approval of contract goals.
 HRD 2 Contractor Utilization Plan Approval 040910 1 of 1 Contract Central

HRD MONTHLY REPORTING INSTRUCTIONS

M/WBE Monthly Utilization Report Instructions

1. MBE/WBE Reporting applies to Contracts that have approved MBE/WBE goals assigned.
2. The City will utilize a web based MBE/WBE Reporting System in the administration of this Contract. This web based application database is a collaboration tool selected and provided by City, which will allow Contractors and Consultants/Subcontractors and Subconsultants to enter data and report on compliance.

Prevailing Wage Certified Payroll Report Instructions

1. Prevailing Wage Certified Payroll Report applies to Contracts that include Prevailing Wage or Davis Bacon Provisions.
2. This web based application database is provided by City for reporting certified payrolls and other related prevailing wage data.
3. Computer Requirements: Minimum Intel Pentium® 4 Processor 2.4 GHz or equivalent processor with 512MB of RAM; recommended Centrino Duo® Processors 1.6 GHz or equivalent with 2GB of RAM, or higher.
 - a. Computer Operation System: Windows XP, Windows Vista, or Windows 7
 - b. Web Browser: Google Chrome
 - c. Connection Speed/Minimum Bandwidth: DSL, ADSL or T1 Line for transferring a minimum of 3 Mbps Downstream and 512 Kbps Upstream
4. City will assist Contractor in providing training of personnel and Subcontractor's personnel.
5. Contractor and Subcontractors shall have the responsibility for visiting the web site and entering data in on timely basis, and as necessary to be in compliance with Prevailing Wage Requirements included in their contracts.

Workforce Monthly Report Instructions

1. Workforce Monthly Reporting only applies to Construction Contracts greater than \$300,000 and greater than 800 projected labor hours.
2. The City will utilize a web based Reporting System in the administration of this Contract. This web based application database is a collaboration tool selected and provided by City, which will allow Contractors and Subcontractors to enter data and report on Workforce compliance.



Pre Contract Bidder's Certification

Project Number 07061111
Project Title KCMO ADA Compliance, Package #6, Community Centers

STATE OF Missouri }
 } SS
COUNTY OF Jackson }

Before me, the undersigned authority, personally appeared, who, being by me duly sworn deposed as follows:

I am authorized to make this affidavit on behalf of the named Bidder. I am of sound mind, capable of making this affidavit, and personally acquainted with the facts herein stated:

A. Bidder is current on payment of its Federal and State Income tax withholding and unemployment insurance payments, either in Missouri for companies doing business in Missouri, or in the state in which Bidder has its principal office; and

B. Bidder declares one of the following, regarding all work performed two (2) years immediately preceding the date of the Bid (check one):

Contract by contract listing of all of Bidder's written notices of violations of any Federal or State prevailing wage statute in which prevailing wage penalties were assessed against the Bidder or paid by the Bidder (Complete and attach additional sheets if necessary):

- 1. _____
- 2. _____
- 3. _____

There have been no written notices of violations of any Federal or State prevailing wage statute in which prevailing wage penalties were assessed against the Bidder or paid by the Bidder.

C. Bidder is currently in good standing with the Missouri Secretary of State or Bidder has filed a Registration of Fictitious Name with the Missouri Secretary of State.

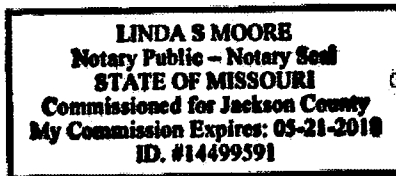
BKM-IEC LLC

(Bidder's Name)

09Jun15
(Date)
[Handwritten Signature]
Signature of Person Making This Affidavit

In witness whereof, I have hereunto subscribed my name and affixed my official seal this 9th day of JUNE, 2015.

[Handwritten Signature]



JUN 09 2015



CONTRACT REQUIRED SUBMISSIONS

Project/Contract Number _____

Project/Contract Title/Description _____

These instructions are to assist Contractor in providing all necessary documents to enter into a contract with the City.

MISSOURI SECRETARY OF STATE BUSINESS ENTITY REGISTRATION

- For a corporation, current Certificate of Good Standing from the Missouri Secretary of State ((816) 889-2925 or (816) 889-2926 or a web site print-out, dated no more than ninety (90) days before the date furnished to the City – One Copy.
- For a business that is not a corporation and not doing business in the exact name of the proprietor, a copy from the Secretary of State, ((816) 889-2925 or (816) 889-2926 of the filed Registration of Fictitious Name dated no more than ninety (90) days before the date furnished to the City – One Copy.

EMPLOYEE ELIGIBILITY VERIFICATION AFFIDAVIT [Required if the contract exceeds \$5,000.00]

- 00515.01 Employee Eligibility Verification Affidavit – One Executed Affidavit
- First and last pages of the E-Verify Program Memorandum of Understanding that your company has received from the U.S. Department of Homeland Security verifying enrollment in the program. For assistance, contact E-Verify Operations at 888-464-4218 – One Copy.

SUBCONTRACTORS LISTING [Applicable form provided]

- Non-Construction Subcontractors List – One Copy
- 01290.09 Subcontractors & Major Material Suppliers List – One Copy

PAYMENT BONDS (If applicable)

- Each copy of the Payment bond must be signed and properly dated by the following, as applicable:

Corporation - A corporate officer authorized to sign on behalf of the corporation and the signature must be attested by a witness to the signature; OR

Limited Liability Company - A member of the limited liability company authorized to sign on behalf of the company and a witness to the signature must attest the signature; OR

Partnership - A partner authorized to sign on behalf of the partnership and the signature must be attested by a witness to the signature; OR

Sole Proprietor - By the proprietor and the signature must be attested by a witness to the signature; OR

Joint Venture - The parties to the Joint Venture authorized to sign on behalf of each party to the Joint Venture, or a person authorized by each party to the Joint Venture to sign on behalf of all parties to the Joint Venture; AND

Surety - A person authorized by the Surety to sign on behalf of the Surety. A power of attorney issued by the Surety Company authorizing its representative to sign the Agreement must be attached to the Agreement and each copy.

PERFORMANCE AND MAINTENANCE BOND (If applicable)

- As applicable, each copy of the Performance and Maintenance bond must be signed and properly dated by:

Corporation - A corporate officer authorized to sign on behalf of the corporation and the signature must be attested by a witness to the signature; OR

Limited Liability Company - A member of the limited liability company authorized to sign on behalf of the company and a witness to the signature must attest the signature; OR

Partnership - A partner authorized to sign on behalf of the partnership and the signature must be attested by a witness to the signature; OR

Sole Proprietor - By the proprietor and the signature must be attested by a witness to the signature; OR

Joint Venture - The parties to the Joint Venture authorized to sign on behalf of each party to the Joint Venture, or a person authorized by each party to the Joint Venture to sign on behalf of all parties to the Joint Venture; AND

Surety - A person authorized by the Surety to sign on behalf of the Surety. A power of attorney issued by the Surety Company authorizing its representative to sign the Agreement must be attached to the Agreement and each copy.

CERTIFICATES OF INSURANCE [Sample form provided] - If you have any questions regarding requirements for insurance certificates, please contact the City's Risk Management Office, 816 513-1299.

- Provide a certificate of insurance for all insurance that may be required in the contract such as:
 - Commercial General Liability
 - Workers' Compensation and Employers' Liability
 - Commercial Automobile Liability
 - Railroad Protective Liability
 - Environmental Liability
 - Asbestos Liability
 - Longshoremen's Insurance
 - Property Insurance
- List the NAIC Number (National Association of Insurance Commissioners) or A.M. Best Number for each Insurer listed on the Certificate of Insurance.
- Certificate "Kansas City, Missouri" must named as an Additional Insured.
- Check the insurance requirements of the Contract. If Contract Documents require that other entities be included as additional insureds, each entity shall be listed on the certificate(s).
- Description of Operations must include Project/Contract Number and Project/Contract Title/Description as contained in the Contract Documents. The Certificate Holder and address block shall be completed as follows:
 - Kansas City, Missouri
 - [Name of applicable City Department]**
 - [Name of Contract Administrator, Buyer, or Project Manager]**
 - [Department Address]**
 - Kansas City, Missouri **[Zip Code]**
- If your insurance agent prepares an ACORD form, the automobile insurance must be "any auto" or better for acceptance by the City.

AFFIRMATIVE ACTION REQUIREMENTS

- Proposed Affirmative Action Program or a copy of a Certificate of Affirmative Action Compliance – One copy.

PRE-CONTRACT BIDDER'S CERTIFICATION (Prevailing Wage Contracts; Form provided)

- Submit form 00490 - Bidder's Pre-Contract Certification (provided).

HEALTH AND SAFETY PLAN (If applicable)

- Bidder's Health and Safety Plan – One copy or one CD Rom.

JASON KANDER

MISSOURI
SECRETARY
OF STATE

MISSOURI ONLINE BUSINESS FILING

MY ACCOUNT

HOME

SEARCH

Shopping Cart

Online Help

Welcome, Nilson M Goes [Log Out](#)

Limited Liability Company Details as of 6/8/2015

- [Fees & Forms](#)
- [FAQ](#)
- [Corporations Home](#)
- [Business Outreach Office](#)
- [UCC Filings](#)
- [Corporation Filings](#)
- [SOS Home](#)
- [Contact Us](#)

*Required Field

File Documents - select the filing from the "Filing Type" drop-down list, then click FILE ONLINE.

File Registration Reports - click FILE REGISTRATION REPORT.

Copies or Certificates - click FILE COPIES/CERTIFICATES.

RETURN TO SEARCH RESULTS

Select filing from the list. **FILE ONLINE**

Filing Type Amended and Restated Articles of Organization

ORDER COPIES/ CERTIFICATES

General Information	Filings	Address	Contact(s)
Name(s) BKM-EG LLC		<u>Address</u>	
Type Limited Liability Company		Charter No. LC1201379	
Domesticity Domestic		Status Active	
Registered Agent Goes, Nilson		Date Formed 2/25/2014	
13625 Oak Street			
Kansas City, MO 64145			
Duration Perpetual			
Managed by			

The information contained on this page is provided as a public service, and may change at any time. The State, its employees, contractors, subcontractors or their employees do not make any warranty, expressed or implied, or assume any legal liability for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed or represent that its use would not infringe on privately-owned rights.

JUN 09 2015

EMPLOYEE ELIGIBILITY VERIFICATION AFFIDAVIT

(Required for any contract with the City of Kansas City, Missouri in excess of \$5,000.00)

STATE OF Missouri)
) ss
COUNTY OF Jackson)

On this 8th day of June, 2015, before me appeared Brent Motley, personally known by me or otherwise proven to be the person whose name is subscribed on this affidavit and who, being duly sworn, stated as follows:

I am of sound mind, capable of making this affidavit, and personally swear or affirm that the statements made herein are truthful to the best of my knowledge. I am the Managing Member (title) of BKM-IEC LLC (business entity) and I am duly authorized, directed or empowered to act with full authority on behalf of the business entity in making this affidavit.

I hereby swear or affirm that the business entity does not knowingly employ any person in connection with the contracted services who does not have the legal right or authorization under federal law to work in the United States as defined in 8 U.S.C. § 1324a(h)(3).

I hereby additionally swear or affirm that the business entity is enrolled in an electronic verification of work program operated by the United States Department of Homeland Security (E-Verify) or an equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, under the Immigration Reform and Control Act of 1986, and that the business entity will participate in said program with respect to any person hired by the business entity to perform any work in connection with the contracted services. I have attached hereto documentation sufficient to establish the business entity's enrollment and participation in the required electronic verification of work program.

I am aware and recognize that unless certain contractual requirements are satisfied and affidavits obtained as provided in Section 285.530, RSMo, the business entity may face liability for violations committed by its subcontractors, notwithstanding the fact that the business entity may itself be compliant.

JUN 09 2015

I acknowledge that I am signing this affidavit as the free act and deed of the business entity and that I am not doing so under duress.



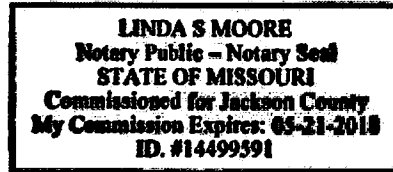
Affiant's signature

Subscribed and sworn to before me this 8th day of June, 2015.



Notary Public Linda S Moore

My Commission expires: May 21, 2018



**THE E-VERIFY
MEMORANDUM OF UNDERSTANDING
FOR EMPLOYERS**

**ARTICLE I
PURPOSE AND AUTHORITY**

The parties to this agreement are the Department of Homeland Security (DHS) and the BKM-IEC LLC (Employer). The purpose of this agreement is to set forth terms and conditions which the Employer will follow while participating in E-Verify.



E-Verify is a program that electronically confirms an employee's eligibility to work in the United States after completion of Form I-9, Employment Eligibility Verification (Form I-9). This Memorandum of Understanding (MOU) explains certain features of the E-Verify program and describes specific responsibilities of the Employer, the Social Security Administration (SSA), and DHS.

Authority for the E-Verify program is found in Title IV, Subtitle A, of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA), Pub. L. 104-208, 110 Stat. 3009, as amended (8 U.S.C. § 1324a note). The Federal Acquisition Regulation (FAR) Subpart 22.18, "Employment Eligibility Verification" and Executive Order 12989, as amended, provide authority for Federal contractors and subcontractors (Federal contractor) to use E-Verify to verify the employment eligibility of certain employees working on Federal contracts.

**ARTICLE II
RESPONSIBILITIES**

A. RESPONSIBILITIES OF THE EMPLOYER

1. The Employer agrees to display the following notices supplied by DHS in a prominent place that is clearly visible to prospective employees and all employees who are to be verified through the system:
 - a. Notice of E-Verify Participation
 - b. Notice of Right to Work
2. The Employer agrees to provide to the SSA and DHS the names, titles, addresses, and telephone numbers of the Employer representatives to be contacted about E-Verify. The Employer also agrees to keep such information current by providing updated information to SSA and DHS whenever the representatives' contact information changes.
3. The Employer agrees to grant E-Verify access only to current employees who need E-Verify access. Employers must promptly terminate an employee's E-Verify access if the employer is separated from the company or no longer needs access to E-Verify.

Company ID Number: 884553

Information relating to the Program Administrator(s) for your Company on policy questions or operational problems:

Name Nilson M Goes
Phone Number (816) 763 - 7471
Fax Number
Email Address nilsonm@iec8a.com

Name Michael D Meyer
Phone Number (913) 290 - 1127
Fax Number
Email Address mmeyer@bkmconstructionllc.com

Name Brent L Motley
Phone Number (913) 832 - 4393
Fax Number
Email Address bmotley@bkmconstructionllc.com



MISSOURI DEPARTMENT OF REVENUE
CUSTOMER SERVICES DIVISION
PROJECT EXEMPTION CERTIFICATE

FORM
5060
(REV. 1-2008)

**TO BE GIVEN TO
YOUR CONTRACTOR**

NAME OF EXEMPT ENTITY ISSUING THE CERTIFICATE City of Kansas City, MO		MISSOURI TAX EXEMPTION NUMBER 12490466	
ADDRESS 414 East 12 th Street, 3 rd Floor	CITY Kansas City	STATE MO	ZIP 64106
BEGIN DATE FOR PROJECT 8/12/2015	PROJECTED COMPLETION DATE 8/6/16	PROJECT NUMBER 07061111	
DESCRIPTION OF PROJECT Project No. 07061111 Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community Center Facilities Bid Date: 5/19/2015 City Project Manager: Jenny T. Harriman, General Services Department Tel: 816-513-2526 Email: Jenny.Harriman@kcmo.org File No. 07061111-002			
PROJECT LOCATION Clay County		EXPIRATION DATE 8/6/16	
THIS EXEMPTION DOES NOT APPLY TO THE PURCHASE OR RENTAL OF MACHINERY, EQUIPMENT, OR TOOLS BY THE CONTRACTOR OR SUB-CONTRACTOR.			
Give a signed copy of this certificate, along with a copy of your Missouri Sales/Use Tax Exemption Letter to each contractor and/or subcontractor who will be purchasing tangible personal property for use in this project. It is your responsibility to ensure the validity of the certificate. You must issue a new certificate if any of the information changes.			
EXEMPT ENTITY'S AUTHORIZED SIGNATURE George H. Goodale, Contract Administrator General Services Procurement		DATE August 18, 2015	
The Missouri exempt entity named above hereby authorizes the purchase, without sales tax, of tangible personal property to be incorporated or consumed in the construction project identified herein and no other, pursuant to Section 144.062, RSMo. I also declare under penalties of perjury that I employ no illegal or unauthorized aliens as defined under federal law and that I am not eligible for any tax exemption, credit or abatement if I employ such aliens.			
NAME OF PURCHASING CONTRACTOR BKM-IEC LLC		Brent Motley bmotley@bkmconstructionllc.com Tel 913-832-4393 Fax	
ADDRESS 13625 Oak Street	CITY Kansas City	STATE MO	ZIP 64145
Contractors present this to your supplier in order to purchase the necessary materials tax exempt.			
NOTE: COMPLETE AND SIGN BOTTOM PORTION IF EXTENDING CERTIFICATE TO YOUR SUBCONTRACTOR.			
NAME OF PURCHASING SUBCONTRACTOR			
ADDRESS	CITY	STATE	ZIP
SIGNATURE OF CONTRACTOR		DATE	

State of Missouri

EXEMPTION FROM MISSOURI SALES AND USE TAX ON PURCHASES

Issued to:

CITY OF KANSAS CITY
414 E 12TH ST 3RD FLOOR
KANSAS CITY MO 64106

Missouri Tax ID
Number: 12490466

Effective Date:
07/11/2002

Your application for sales/use tax exempt status has been approved pursuant to Section 144.030.1, RSMo. This letter is issued as documentation of your exempt status.

Purchases by your Agency are not subject to sales or use tax if within the conduct of your Agency's exempt functions and activities. When purchasing with this exemption, furnish all sellers or vendors a copy of this letter. This exemption may not be used by individuals making personal purchases.

A contractor may purchase and pay for construction materials exempt from sales tax when fulfilling a contract with your Agency only if your Agency issues a project exemption certificate and the contractor makes purchases in compliance with the provisions of Section 144.062, RSMo.

Sales by your Agency are subject to all applicable state and local sales taxes. If you engage in the business of selling tangible personal property or taxable services at retail, you must obtain a Missouri Retail Sales Tax License and collect and remit sales tax.

This is a continuing exemption subject to legislative changes and review by the Director of Revenue. If your Agency ceases to qualify as an exempt entity, this exemption will cease to be valid. This exemption is not assignable or transferable. It is an exemption from sales and use taxes only and is not an exemption from real or personal property tax.

Any alteration to this exemption letter renders it invalid.

If you have any questions regarding the use of this letter, please contact the Division of Taxation and Collection, P.O. Box 3300, Jefferson City, MO 65105-3300, phone 573-751-2836.



PERFORMANCE AND MAINTENANCE BOND

Project Number 07061111-002

Project Title Bid Package No. 6 - ADA Compliance Project for Parks & Recreation
Department - Community Center Facilities

KNOW ALL MEN BY THESE PRESENTS: That BKM-IEC, LLC, as PRINCIPAL (CONTRACTOR), and Travelers Casualty and Surety Company of America, (SURETY), licensed to do business as such in the State of Missouri, hereby bind themselves and their respective heirs, executors, administrators, successors, and assigns unto Kansas City, Missouri, a constitutionally chartered municipal corporation, (OWNER), as obligee, in the penal sum of Nine Hundred Three Thousand Two Hundred One & No/100 Dollars (\$ 903,201.00) for the payment whereof CONTRACTOR and SURETY bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

CONTRACTOR has entered into a Contract with OWNER for Project No. 07061111-002 - Bid Package No. 6 - ADA Compliance Project for Parks & Recreation Dept. - Community Center Facilities which Contract, including any present or future amendment thereto, is incorporated herein by reference and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if CONTRACTOR shall promptly and faithfully perform said Contract including all duly authorized changes thereto, and including any maintenance requirements contained therein, according to all the terms thereof, including those under which CONTRACTOR agrees to pay legally required wage rates including the prevailing hourly rate of wages in the locality, as determined by the Department of Labor and Industrial Relations or by final judicial determination, for each craft or type of workman required to execute the Contract and, further, shall defend, indemnify, and hold harmless OWNER from all damages, including but not limited to, liquidated damages, loss and expense occasioned by any failure whatsoever of said CONTRACTOR and SURETY to fully comply with and carry out each and every requirement of the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect.

WAIVER. That SURETY, for value received, hereby expressly agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Work to be performed thereunder, shall in any way affect the obligations of this Bond; and it does hereby waive notice of any such change, extension of time, or alteration or addition to the terms of the Contract or the Work to be performed thereunder.

IN WITNESS WHEREOF, the above parties have executed this instrument the 8th day of June, 2015.

CONTRACTOR

Name, address and facsimile number of Contractor

BKM-IEC, LLC

13625 Oak Street

Kansas City, MO 64145

816-763-0295

I hereby certify that I have authority to execute this document on behalf of Contractor

By: 

Title: BKM-IEC, LLC Managing Partner

(Attach corporate seal if applicable)

SURETY

Name, address and facsimile number of Surety:
Travelers Casualty and Surety Company of America

One Tower Square
Hartford, CT 06183
913-402-5457

I hereby certify that (1) I have authority to execute this document on behalf of Surety; (2) Surety has an A.M. Best rating of A-, V, or better; (3) Surety is named in the current list of "Companies Holding Certificates of Authority as Acceptable Reinsuring Companies: as published in Circular 570 (most current revision) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury; and (4) Surety is duly licensed to issue bonds in the State of Missouri and in the jurisdiction in which the Project is located.

By: Kathy L. Fagan
Title: Kathy L. Fagan, Attorney-in-Fact
Date: June 8, 2015

(Attach seal and Power of Attorney)

SURETY VERIFIED BY
George H. Goodale

JUN 12 2015



POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company

Attorney-In Fact No. 228286

Certificate No. 006001677

KNOW ALL MEN BY THESE PRESENTS: That Farmington Casualty Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company are corporations duly organized under the laws of the State of Connecticut, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Casey M. Parisoff, Raymond C. Ritchey Jr., David H. Parkhurst, Michael P. Fagan, Vickie J. Nickel, Lisa A. Summers, and Kathy L. Fagan

of the City of Overland Park, State of Kansas, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 29th day of July, 2014.

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company



State of Connecticut
City of Hartford ss.

By: [Signature]
Robert L. Raney, Senior Vice President

On this the 29th day of July, 2014, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.
My Commission expires the 30th day of June, 2016.



[Signature]
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

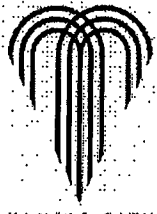
IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this _____ day of JUN 08 2015, 20 ____.

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

Kevin E. Hughes
Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.



PAYMENT BOND

Bond #106308475

Project Number 07061111-002

Project Title Bid Package No. 6 - ADA Compliance Project for Parks & Recreation
Department - Community Center Facilities

KNOW ALL MEN BY THESE PRESENTS: That BKM-IEC, LLC, as PRINCIPAL (CONTRACTOR), and Travelers Casualty and Surety Company of America (SURETY), licensed to do business as such in the State of Missouri, hereby bind themselves and their respective heirs, executors, administrators, successors, and assigns unto Kansas City, Missouri, a constitutionally chartered municipal corporation, (OWNER), as obligee, in the penal sum of Nine Hundred Three Thousand Two Hundred One & NO/100 Dollars (\$903,201.00) for the payment whereof CONTRACTOR and SURETY bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

CONTRACTOR has entered into a contract with OWNER for Project No. 07061111-002 - Bid Package No. 6 - ADA Compliance Project for Parks & Recreation Community Center Facilities, which Contract, including any present or future amendment thereto, is incorporated herein by reference and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if in connection with the Contract, including all duly authorized modifications thereto, prompt payment shall be made to all laborers, subcontractors, teamsters, truck drivers, owners or other suppliers or for equipment employed on the job, and other claimants, for all labor performed in such work whether done for CONTRACTOR, a subcontractor, SURETY, a completion contractor or otherwise (at the full wage rates required by any law of the United States or of the State of Missouri, where applicable), for services furnished and consumed, for repairs on machinery, for equipment, tools, materials, lubricants, oil, gasoline, water, gas, power, light, heat, oil, telephone service, grain, hay, feed, coal, coke, groceries and foodstuffs, either consumed, rented, used or reasonably required for use in connection with the construction of the work or in the performance of the Contract and all insurance premiums, both for compensation and for all other kinds of insurance on the work, for sales taxes and for royalties in connection with, or incidental to, the completion of the Contract, in all instances whether the claim be directly against CONTRACTOR, against SURETY or its completion contractor, through a subcontractor or otherwise, and, further, if CONTRACTOR shall defend, indemnify and hold harmless OWNER from all such claims, demands or suits by any such person or entity, then this obligation shall be void; otherwise, it shall remain in full force and effect.

Any conditions legally required to be included in a Payment Bond on this Contract, including but not limited to those set out in §107.170 RSMo. are included herein by reference.

SURETY agrees that, in the event that CONTRACTOR fails to make payment of the obligations covered by this Bond, it will do so and, further, that within forty-five (45) days of receiving, at the address given below, a claim hereunder stating the amount claimed and the basis for the claim in reasonable detail, it (a) will send an answer to the claimant, with a copy to OWNER stating the amounts that are undisputed and the basis for challenging any amounts that are disputed, and (b) will pay any amounts that are undisputed. The amount of this Bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.

While this Bond is in force, it may be sued on at the instance of any party to whom any such payment is due, in the name of OWNER to the use for such party. OWNER shall not be liable for the payment of any costs or expenses of any such suit.

No suit shall be commenced or pursued hereunder other than in a state court of competent jurisdiction in Jackson, Clay or Platte County, Missouri, or in the United States District Court for the Western District of Missouri.



WAIVER. That SURETY, for value received, hereby expressly agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Work to be performed thereunder, shall in any way affect the obligations of this Bond; and it does hereby waive notice of any such change, extension of time, or alteration or addition to the terms of the Contract or the Work to be performed thereunder.

IN WITNESS WHEREOF, the above parties have executed this instrument the 8th day of June, 2015.

CONTRACTOR

Name, address and facsimile number of Contractor

BKM-IEC, LLC

13625 Oak Street

Kansas City, MO 64145

816-763-0295

I hereby certify that I have authority to execute this document on behalf of Contractor.

By: 

Title: Brent L. Plotley Managing Partner

(Attach corporate seal if applicable)

SURETY

Name, address and facsimile number of Surety:

Travelers Casualty and Surety Company of America

One Tower Square

Hartford, CT 06183

913-402-5457

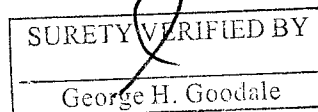
I hereby certify that (1) I have authority to execute this document on behalf of Surety; (2) Surety has an A.M. Best rating of B+, V. or better; (3) Surety is named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (most current revision) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury; and (4) Surety is duly licensed to issue bonds in the State of Missouri and in the jurisdiction in which the Project is located.

By: 

Title: Kathy L. Fagan, Attorney-in-Fact

Date: June 8, 2015

(Attach seal and Power of Attorney)



JUN 11 2015

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POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company

Attorney-In Fact No. 228286

Certificate No. 006001677

KNOW ALL MEN BY THESE PRESENTS: That Farmington Casualty Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company are corporations duly organized under the laws of the State of Connecticut, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Casey M. Parisoff, Raymond C. Ritchey Jr., David H. Parkhurst, Michael P. Fagan, Vickie J. Nickel, Lisa A. Summers, and Kathy L. Fagan

of the City of Overland Park, State of Kansas, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 29th day of July, 2014.

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company



State of Connecticut
City of Hartford ss.

By: [Signature]
Robert L. Raney, Senior Vice President

On this the 29th day of July, 2014, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.
My Commission expires the 30th day of June, 2016.



[Signature]
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this _____ day of JUN 08 2015, 20__.

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

Kevin E. Hughes
Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
6/9/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Cornerstone Kansas City LLC 4400 College Blvd. Ste. 150 Overland Park KS 66211		CONTACT NAME: Kathy Hamilton PHONE (A/C, No. Ext): (913) 378-1050 FAX (A/C, No): (913) 378-0399 E-MAIL ADDRESS: khamilton@ckcins.com	
INSURED BKM-IEC, LLC 13625 Oak Street Kansas City MO 64145-1459		INSURER(S) AFFORDING COVERAGE INSURER A: United Fire and Casualty Company MAIC # 13021 INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:	

COVERAGES CERTIFICATE NUMBER: CL156915710 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDITIONAL SUBROGATION WAIVED	POLICY NUMBER	POLICY EFF. DATE (MM/DD/YYYY)	POLICY EXP. DATE (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	X Y	60462899	6/9/2015	6/9/2016	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
A	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO ALLOWED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	X Y	60462899	6/9/2015	6/9/2016	COMBINED SINGLE LIMIT (Ea occurrence) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$	X Y	60462899	6/9/2015	6/9/2016	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N Y N/A	60462899	6/9/2015	6/9/2016	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Builders Risk		60462899	6/9/2015	6/9/2016	Limit/Deductible: 1,500,000/1000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Project # 07061111-002 (5/19/2015) - Bid Package No. 6-ADA Compliance Project for Parks and Recreation Department-Community Center Facilities. City of Kansas City, MO, Design Professional, Consultants and any other individuals identified in the supplementary conditions including respective officers, directors, partners, employees, agents are Additional Insureds including completed operations on a primary basis. Waiver of Subrogation applies to City of Kansas City, MO. Thirty (30) days written notice in event of cancellation/non-renewal

CERTIFICATE HOLDER City of Kansas City, Missouri General Services Department 414 E 12th Street. 1st Floor, Room 102W City Hall Kansas City, MO 64106	CANCELLATION George H. Gowdall JUN 09 2015 SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE David Parkhurst/KH
--	--





AUTHORIZATION TO RELEASE A REVENUE CLEARANCE LETTER

Revenue Division
414 East 12th Street, 2nd floor, Room 202 W
Kansas City, MO 64106 Phone (816) 513-1135 Fax (816) 513-1077 email: revenue@kcmo.org

I authorize the City of Kansas City, Missouri, Finance Department, Revenue Division, to release a Revenue Clearance Letter for:

Name of Taxpayer: _____ Tax I.D.# _____
(PRINT)

Address: _____

Check this box and the City will send the Clearance Letter to you or the contractor designated.

I authorize the City to provide a copy of the Taxpayer's Revenue Clearance Letter to the following:

NAME <i>(PRINT)</i>	BUSINESS NAME	TITLE
ADDRESS	CITY, STATE, ZIP CODE	
PHONE NUMBER	FAX NUMBER	E-MAIL ADDRESS

I authorize the City to provide the Taxpayer's Revenue Clearance Letter to all City Departments and to publish on the City's internet/intranet website that the Taxpayer is in compliance with the tax ordinances administered by the City's Commissioner of Revenue.

Please send my 1st Revenue Clearance Letter to: _____
(Print Name of City Department/Contact Person/E-mail/Fax Number)

This authorization shall expire one (1) year from the date of the signature.

The City, Commissioner of Revenue and the Revenue Division personnel (hereinafter "the City"), are hereby held harmless from any and all liability relating to unauthorized disclosure of confidential tax information resulting from release of information under all applicable confidentiality laws including federal, state, or local including any damages sustained by wrongful transmission of confidential tax information to any other person.

UNDER PENALTIES OF PERJURY, I DECLARE THAT I HAVE EXAMINED THIS AUTHORIZATION, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, IT IS TRUE, CORRECT AND COMPLETE.

I hereby certify that I am the Taxpayer named herein or that I have the authority to execute this authorization and hold harmless agreement on behalf of the Taxpayer.

NAME <i>(PRINT)</i>	TITLE <i>(IF APPLICABLE)</i>	
SIGNATURE	PHONE NUMBER	DATE

A FACSIMILE OF THIS DOCUMENT SHALL CONSTITUTE AN ORIGINAL



GENERAL CONDITIONS

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ARTICLE 1 DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

A. Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

1. **Addenda** - Written or graphic instruments issued prior to the opening of Bids that clarify, correct or change the Bidding Requirements or the Contract Documents.

2. **Agreement**—The written Contract between CITY and CONTRACTOR governing the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

3. **Application for Payment**—The form accepted by CITY's Representative which is to be used by CONTRACTOR in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. **Asbestos** - Any material that contains more than one percent (1%) Asbestos and is friable or is releasing Asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. **Bid**- The offer or proposal of the Bidder submitted on the Bid Form/Contract setting forth the prices for the Work to be performed. A Bidder's Bid becomes a Contract with CITY if the CITY executes the Bid Form/Contract submitted by Bidder. If the CITY executes the Bid Form/Contract submitted by Bidder, the term "Bidder" shall mean CONTRACTOR.

6. **Bidder**- One who submits a Bid directly to CITY, as distinct from a sub-bidder who submits a bid to a Bidder. If the CITY executes the Bid Form/Contract submitted by Bidder, the term "Bidder" shall mean CONTRACTOR in both the Bidding Documents and Contract Documents unless the context clearly indicates otherwise.

7. **Bidding Documents**- The advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form/Contract, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

8. **Bidding Requirements**- The advertisement or invitation to bid, Instructions to Bidders, Bid security, and the Bid Form/Contract with any supplements.

9. **Bonds**- Payment Bond and Performance and Maintenance Bond and other instruments of security.

10. **Calendar Day**- Any day shown on the calendar, including Saturdays, Sundays, and holidays.

11. **Change Order**- A written document issued by CITY that authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Contract.

12. **CITY/OWNER**- Kansas City, Missouri, a constitutionally chartered municipal corporation, with which CONTRACTOR has entered into the Contract and for whom the Work is to be provided.

13. **CITY's Representative**- Person or agency designated to act for the Director as provided in these Contract Documents.

14. **Consultant**- Person, firm or corporation having a contract with CITY or DESIGN PROFESSIONAL to furnish services as an independent professional associate or Consultant with respect to the Project and who's identified as such in the Supplementary Conditions.

The Consultant(s) is identified and their seals affixed on the Certification Page(s). The certifications describe the respective responsibilities for the Drawings and Specifications prepared by the Consultant(s) and are incorporated into this Contract.

15. Contract- The entire and integrated written agreement between CITY and CONTRACTOR concerning the Work that incorporates all Contract Documents. The Bid Form/Contract submitted by Bidder is the Contract between CITY and CONTRACTOR upon execution by CITY. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

16. Contract Documents- The Contract Documents establish the rights and obligations of the parties and include the Contract, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid Form/Contract (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Intent to Contract), the HRD Construction Project Instructions, the Contractor's Utilization Plan/Request for Waiver, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Project Manual and the certification page(s) of the DESIGN PROFESSIONAL and Consultant(s), together with approved project baseline schedule and amendments thereto and all Written Amendments, Change Orders, Work Change Directives, and DESIGN PROFESSIONAL's written interpretations and clarifications issued on or after the Effective Date of the Contract, and approved Shop Drawings. Reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this Paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by CITY to CONTRACTOR are not Contract Documents, except project schedules submitted by CONTRACTOR and approved by CITY.

17. Contract Price- The money payable by CITY to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement.

18. Contract Times- The number of days or the dates stated in the Supplementary Conditions: (a) to achieve Substantial Completion, and (b) to complete the Work so that it is ready for final payment as evidenced by CITY's Representative's written recommendation of final payment.

19. CONTRACTOR- The person, firm, partnership, company, corporation or association licensed or otherwise authorized by law to do business in Missouri, with whom CITY has entered into the Agreement.

20. Day- Shall constitute a Calendar Day.

21. DESIGN PROFESSIONAL- Architect, Engineer or other licensed professional who is either employed by or has contracted with CITY to serve in a design capacity and whose Consultants, members, partners, employees or agents have prepared and sealed the Drawings and Specifications.

The DESIGN PROFESSIONAL(s) is identified and their seals affixed on the Certification Page(s). The certifications describe the respective responsibilities for the Drawings and Specifications prepared by the DESIGN PROFESSIONAL and are incorporated into this Contract.

22. DESIGN PROFESSIONAL's Project Representative- The authorized representative of DESIGN PROFESSIONAL who may be assigned to the Site or any part thereof.

23. Director- The term Director shall mean the duly appointed executive officer of a department of City who is empowered by the City Charter or by the City Council to enter into a contract on behalf of City, or to grant a permit for improvements to land owned by City. A Director is authorized to delegate this authority to a City employee so designated in writing.

24. Drawings- The drawings which graphically show the scope, extent and character of the Work to be furnished and performed by CONTRACTOR and which have been prepared by DESIGN PROFESSIONAL and are included in the Contract Documents. Shop Drawings are not Drawings as so defined.

25. Effective Date of the Contract- The date indicated in the Contract on which it becomes effective, but if no such date is indicated it means the date on which the Contract is fully executed by CITY.

26. General Requirements- Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

27. Hazardous Environmental Condition- The presence at the Site of Asbestos, Lead-Based Paint, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

28. Hazardous Waste- The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

29. Laws or Regulations- Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

30. Lead-Based Paint- Any paint, varnish, stain, or other applied coating that has one (1) mg or more of lead per square centimeter. The terms "leaded paint" and "lead-containing paint" are synonymous with Lead-Based Paint.

31. Liens- Liens, charges, security interests or encumbrances upon real property or personal property.

32. Milestone- A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

33. Notice of Intent to Contract- The written notice by CITY to the apparent successful Bidder stating that upon compliance by that apparent successful Bidder with the conditions in the Bid Documents enumerated, within the time specified, and upon enactment of an appropriate ordinance or resolution, CITY will sign and deliver the Contract.

34. Notice to Proceed- A written notice given by CITY to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.

35. Partial Utilization- Use by CITY of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

36. PCBs- Polychlorinated biphenyls.

37. Petroleum- Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Wastes and crude oils.

38. Project- The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

39. Project Manual- The documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual may be issued in one or more volumes and is contained in the table(s) of contents.

40. Radioactive Material- Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

41. Samples- Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

42. Shop Drawings- All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

43. Site- Lands or areas indicated in the Contract Documents as being furnished by CITY upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by CITY which are designated for the use of CONTRACTOR.

44. Specifications- Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

45. Subcontractor- Any individual, firm, partnership, company, corporation or association licensed or otherwise authorized by law to do business in Missouri, to whom CONTRACTOR, with written notification to CITY, has entered into an agreement to perform a part of the Work.

46. Substantial Completion- When Work (or a specified part thereof) has progressed to the point where, in the opinion of DESIGN PROFESSIONAL as evidenced by DESIGN PROFESSIONAL's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

47. Supplementary Conditions- The part of the Contract Documents which amends and/or supplements these General Conditions.

48. Supplier- A manufacturer, fabricator, supplier, distributor, materialman or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated into the Work by CONTRACTOR or any Subcontractor.

49. Underground Facilities- All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. Unit Price Work- Work to be paid for on the basis of unit prices.

51. Work- The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work includes and is the result of performing or furnishing labor, and furnishing and incorporating material and equipment into the construction, and furnishing documents, all as required by the Contract Documents.

52. Work Change Directive- A written directive to CONTRACTOR, issued on or after the Effective Date of the Contract, signed by CITY and recommended by DESIGN PROFESSIONAL, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed, or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times, but is evidence that the parties expect that the change directed or

documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

53. Work Day - Any day during which the CONTRACTOR is able to work a period of six (6) hours or more. Days that are not Work Days are days during which the CONTRACTOR is unable to work for a period of six (6) hours by reason of strikes, boycotts, labor disputes, embargoes, unusual delays in transportation or shortage of material, acts of God, acts of the public enemy, acts of superior governmental authority, weather conditions, riots, rebellion, sabotage, or any other circumstances for which CONTRACTOR is not responsible or which is not within its control. Saturdays, Sundays, and holidays on which the CONTRACTOR's forces engage in Work requiring the presence of an inspector, will be considered as Work Days.

54. Written Amendment- A written statement modifying the Contract Documents, signed by CITY and CONTRACTOR on or after the Effective Date of the Contract and normally dealing with the non-engineering or non-technical rather than strictly construction-related aspects of the Contract Documents.

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as ordered," "as directed," "as required," "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of DESIGN PROFESSIONAL as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to DESIGN PROFESSIONAL any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.08 or any other provision of the Contract Documents.

B. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to CITY's Representative's recommendation of final payment (unless responsibility for the protection thereof has been assumed by CITY at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

C. Furnish, Install, Perform, Provide

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

D. Unless stated otherwise in the Contract Documents, words and phrases which have a well-known technical or construction industry or trade meanings are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 PRELIMINARY MATTERS

2.01 Delivery of Bonds

A. CONTRACTOR shall deliver to CITY such Bonds as CONTRACTOR may be required to furnish.

2.02 Evidence of Insurance

A. CONTRACTOR shall deliver to CITY certificates of insurance or other evidence of insurance that CITY may request, which CONTRACTOR is required to purchase and maintain in accordance with Article 5 or any other applicable provision in the Contract Documents.

2.03 Copies of Documents

A. CITY shall furnish to CONTRACTOR one (1) copy of the Drawings and Specifications, including addenda.

2.04 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the date indicated in the Notice to Proceed.

2.05 Starting the Work

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run, but no Work shall be done at the Site prior to the date on which the Contract Times commence to run, unless otherwise indicated in the Notice to Proceed.

2.06 Before Starting Construction

A. CONTRACTOR's Review of Contract Documents: Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to DESIGN PROFESSIONAL any conflict, error, ambiguity or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from DESIGN PROFESSIONAL before proceeding with any Work affected thereby. CONTRACTOR shall not be liable to CITY or DESIGN PROFESSIONAL for failure to report any conflict, error, ambiguity or discrepancy in the Contract Documents, unless CONTRACTOR knew or reasonably should have known thereof.

B. Preliminary Schedules: Within ten (10) days after the Effective Date of the Contract, or on such later date as CITY's Representative shall provide in writing, CONTRACTOR shall submit to CITY's Representative for review:

1. Preliminary Project Schedule: CONTRACTOR shall submit a proposed project schedule for CITY's acceptance. The proposed project schedule shall include a detailed and comprehensive construction schedule utilizing a critical path method diagram network that (a) shows all major procurement and construction elements and phases of the Project; (b) breaks down each element or phase by trade; (c) shows early and late starts so that all float time will be accurately identified; (d) all other activities necessary for the timely completion of the Project in accordance with the scheduled dates for Substantial and Final Completion; and (e) highlights the project's critical path. CITY's acceptance is expressly limited to CITY's acknowledgement that, based upon CITY's limited review, the dates of Substantial

Completion and Milestone dates are acceptable. After final acceptance of the preliminary project schedule by the CITY, it shall be considered the project baseline schedule pursuant to Paragraph 2.07(B).

2. Preliminary schedule of Shop Drawings and Sample submittals which will list each required submittal and the times for submitting, reviewing and processing such submittal; and

3. Preliminary 01290.02 Schedule of Values for all of the Work which will include quantities and prices of items which when added together equals the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

C. Preconstruction Conference: Before any Work at the Site may be started, a conference attended by CONTRACTOR, DESIGN PROFESSIONAL and others, as appropriate, will be scheduled by CITY's Representative to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.06 B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, maintaining required records, Claims process, dispute resolution or any other applicable provisions of the Contract Documents.

2.07 Acceptable Schedules

A. Acceptable schedule: The Contractor shall update and submit to the CITY for review the preliminary schedule within seven (7) Calendar Days after the Notice to Proceed.

1. The CITY shall review and make any necessary comments and/or adjustments to the updated preliminary schedule. The Contractor shall incorporate the CITY's comments and resubmit the updated preliminary schedule within seven (7) Calendar Days from receipt of the CITY's comments.

B. Project Baseline Schedule: The accepted updated preliminary schedule shall be considered the project baseline schedule and shall be used by the CONTRACTOR for planning, scheduling, managing, and executing the Work. The project baseline schedule shall not be changed without the written consent of CITY. The project baseline schedule may be further modified by the Supplemental Conditions.

C. CONTRACTOR's schedule of values will be acceptable to CITY's Representative as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 CONTRACT DOCUMENTS : INTENT, AMENDING, REUSE

3.01 Intent

A. The Contract Documents comprise the entire Contract between CITY and CONTRACTOR concerning the Work.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically called for at no additional cost to CITY. Clarifications and interpretations of the Contract Documents shall be issued by DESIGN PROFESSIONAL as provided in Paragraph 9.03.

C. Correlation and intent of documents: The Drawings and Specifications are intended to supplement each other. Any Work shown on the Drawings and not mentioned in the Specifications (or vice versa) shall be as binding and shall be completed the same as if mentioned or shown on both. In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

1. Change Orders and Written Amendments
2. Project Baseline Schedule Requirements
3. Approved Shop Drawings
- 4 Addenda, with those of later date having precedence over those of earlier date
5. The Supplementary Conditions
6. The General Conditions
7. Drawings and Specifications

D. In the case of an inconsistency between Drawings and Specifications, the requirements of the Specifications shall govern. If Drawings are in conflict, larger scale details shall govern over smaller or no-scale Drawings. If Specification sections are in conflict with each other, the conflict shall be resolved by DESIGN PROFESSIONAL in accordance with reasonable interpretation of such documents.

E. The general character of the detailed Work is shown on the Drawings, but minor modifications may be made in the full size or scale details. Where the word "similar" occurs on the Drawings, it shall be used in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection to the other parts of the Work. Where on any Drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to all other like portions of the Work. Where ornaments or other details are indicated by starting only, such details shall be continued throughout the courses or parts in which they occur and shall also apply to all other similar parts in the Work, unless otherwise indicated.

3.02 Reference to Standards and Specifications of Technical Societies

A. Reference to standards, specifications, manuals or codes of any technical society, organization or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or on the date of CONTRACTOR's proposal if there are no Bids), except as may be otherwise specifically stated in the Contract Documents.

1. No provision of any such standard, specification, manual, code or instruction of Supplier shall be effective to change the duties or responsibilities of CITY, CONTRACTOR or DESIGN PROFESSIONAL, or any of their Subcontractors, Consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to CITY or DESIGN PROFESSIONAL or any of their Consultants, agents or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies: If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Laws or Regulations applicable to the performance of the Work or of any standard, specification, manual, code or any instruction of any Supplier referred to in Paragraph 6.07, CONTRACTOR shall report it immediately to DESIGN PROFESSIONAL in writing. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as authorized by Paragraph 6.17) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to CITY or DESIGN PROFESSIONAL for failure to report any such conflict, error, ambiguity or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. Resolving Discrepancies. The provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity or discrepancy between the provisions of the Contract Documents and:

1. the provisions of any standard, specification, manual, code or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
2. the provisions of any Laws or Regulations applicable to the performance of the Work.

3.04 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

1. a Written Amendment or
2. a Change Order (pursuant to Article 10), whether pursuant to a Work Change Directive or otherwise.

B. The requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, in one or more of the following ways

1. DESIGN PROFESSIONAL's approval of a Shop Drawing or Sample (pursuant to Paragraph 6.18), or
2. DESIGN PROFESSIONAL's written interpretation or clarification (pursuant to Paragraph 9.03).

3.05 Reuse of Documents

A. CONTRACTOR and any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under this Contract:

1. shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of DESIGN PROFESSIONAL or Consultant, and
2. shall not reuse any of such Drawings, Specifications, other documents or copies thereof on extensions of the Project or any other project without written consent of CITY, and of DESIGN PROFESSIONAL or Consultant, as applicable, and specific written verification or adaptation by DESIGN PROFESSIONAL or Consultant.

This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 Availability of Lands

A. CITY shall furnish the Site. CITY shall identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by CITY, unless otherwise provided in the Contract Documents. If CONTRACTOR and CITY are unable to agree on entitlement to or the amount or extent of any adjustments in the Contract Price or the Contract Times or both as a result of any delay in CITY's furnishing these lands, rights-of-way or easements, CONTRACTOR may make a Claim as provided in Article 16. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 Subsurface and Physical Conditions

A. Reports and Drawings: Reference is made to the Supplementary Conditions for identification of:

1. Subsurface Conditions: Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by DESIGN PROFESSIONAL in preparing the Contract Documents; and
2. Physical Conditions: Those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that have been utilized by DESIGN PROFESSIONAL in preparing the Contract Documents.

B. Limited Reliance by CONTRACTOR on Technical Data Authorized: CONTRACTOR may rely upon the general accuracy of the technical data contained in reports and drawings of subsurface or physical conditions, but such reports and drawings are not Contract Documents. The technical data is identified in the Supplementary Conditions. Except for reliance on such technical data, CONTRACTOR may not rely upon or make any Claim against CITY, DESIGN PROFESSIONAL or any Consultant with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings, or
3. any CONTRACTOR interpretation of or conclusion drawn from any technical data or any such other data, interpretations, opinions or information.

4.03 Differing Subsurface or Physical Conditions

A. Notice of Differing Subsurface or Physical Conditions. If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any technical data on which CONTRACTOR is entitled to rely as provided in Paragraphs 4.02 A and 4.02 B is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.17), notify CITY and DESIGN PROFESSIONAL in writing about such condition(s). CONTRACTOR shall not further disturb such conditions or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. DESIGN PROFESSIONAL's Review: After receipt of notice as required by Paragraph 4.03 A, DESIGN PROFESSIONAL will promptly review the pertinent conditions, determine the necessity for CITY to obtain additional exploration or tests with respect thereto and notify CITY in writing (with a copy to CONTRACTOR) of DESIGN PROFESSIONAL's findings and conclusions.

C. Possible Contract Documents Change: If CITY concludes that a change in the Contract Documents is required as a result of a condition that meets one or more of the categories in Paragraph 4.03 A, a Work Change Directive or a Change Order will be issued as provided in Article 10 to reflect and document the consequences of such change.

D. Possible Price or Times Adjustments: An equitable adjustment in the Contract Price or in the Contract Times, or both, will be allowed to the extent that the existence of a subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

1. the condition must meet any one or more of the categories described in Paragraphs 4.03 A.1 through 4.03 A.4, inclusive;
2. a change in the Contract Documents pursuant to Paragraph 4.03 C will not be an automatic authorization of, nor a condition precedent to, entitlement to any such adjustments;
3. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.06 and 11.04; and
4. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if;
 - a. CONTRACTOR knew, or by the exercise of ordinary care could have known, of such conditions at the time CONTRACTOR made a final commitment to CITY with respect to Contract Price and Contract Times by the submission of a Bid; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or
 - c. CONTRACTOR failed to give the written notice as required by Paragraph 4.03 A.

E. If CITY and CONTRACTOR are unable to agree on entitlement to, or magnitude of, an equitable adjustment in the Contract Price pursuant to Article 11 and/or Contract Times pursuant to Article 12, a Claim may be made therefore as provided in Article 16. However, CITY, DESIGN PROFESSIONAL and Consultants shall not be liable to CONTRACTOR for any costs, losses or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04. Physical Conditions – Underground Facilities

A. Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to CITY or DESIGN PROFESSIONAL by the owners of such Underground Facilities or by others.

1. CITY and DESIGN PROFESSIONAL shall not be responsible for the accuracy or completeness of any such information or data; and
2. The cost of all of the following will be included in the Contract Price and CONTRACTOR shall have full responsibility for:
 - a. reviewing and checking all such information and data,
 - b. locating all Underground Facilities shown or indicated in the Contract Documents,
 - c. coordination of the Work with the owners of such Underground Facilities during construction, and
 - d. the safety and protection of all such Underground Facilities as provided in Paragraph 6.14 and repairing any damage thereto resulting from the Work.

B. Not Shown or Indicated: If an Underground Facility is uncovered or revealed at or contiguous to the Site, and was not shown or indicated in the Contract Documents, or was

shown or indicated incorrectly in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.17), identify the owner of such Underground Facility and give written notice to that owner and to CITY and DESIGN PROFESSIONAL.

C. DESIGN PROFESSIONAL's Review: After receipt of notice as required by Paragraph 4.04 B, DESIGN PROFESSIONAL will promptly review the consequences of the existence of the Underground Facility and notify CITY in writing (with a copy to CONTRACTOR) of DESIGN PROFESSIONAL's findings and conclusions.

D. Possible Contract Documents Change: If CITY concludes that a change in the Contract Documents is required as a result of the existence of an Underground Facility that either was not shown, or was shown incorrectly, in the Contract Documents, a Work Change Directive or Change Order will be issued as provided in Article 10 to reflect and document the consequences of such change.

E. Possible Price or Times Adjustments: An equitable adjustment in the Contract Price or in the Contract Times, or both, will be allowed to the extent that the existence of the Underground Facility causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

1. a change in the Contract documents pursuant to Paragraph 4.04 D will not be an automatic authorization of, nor a condition precedent to, entitlement to any such adjustments;

2. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.06 and 11.04; and

3. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if;

a. CONTRACTOR knew, or by the exercise of ordinary care could have known, of the existence of the Underground Facility at the time CONTRACTOR made a final commitment to CITY with respect to Contract Price and Contract Times by the submission of a Bid; or

b. the existence of the Underground Facility could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice as required by Paragraph 4.04 B.

F. If CITY and CONTRACTOR are unable to agree on entitlement to, or magnitude of, an equitable adjustment in the Contract Price pursuant to Article 11 and/or Contract Times pursuant Article 12, a Claim may be made therefore as provided in Article 16. However, CITY, DESIGN PROFESSIONAL and Consultants shall not be liable to CONTRACTOR for any costs, losses or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.05 Reference Points

A. CITY shall provide engineering surveys to establish reference points for construction that in DESIGN PROFESSIONAL's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of CITY. CONTRACTOR shall report to DESIGN PROFESSIONAL whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be

responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 Asbestos, Lead-Based Paint, PCBs, Petroleum, Hazardous Waste or Radioactive Material

A. Reports and Drawings: Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the DESIGN PROFESSIONAL in the preparation of the Contract Documents.

B. Limited Reliance by CONTRACTOR on Technical Data Authorized: CONTRACTOR may rely upon the general accuracy of the technical data contained in reports and drawings relating to a Hazardous Environmental Condition at the Site, but such reports and drawings are not Contract Documents. Such technical data is identified in the Supplementary Conditions. Except for such reliance on such technical data, CONTRACTOR may not rely upon or make any Claim against CITY, DESIGN PROFESSIONAL or any Consultant with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any CONTRACTOR interpretation of or conclusion drawn from any technical data or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for all Hazardous Environmental Conditions created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible. CONTRACTOR shall not be entitled to an extension of the Contract Times or an increase in the Contract Price if CONTRACTOR, Subcontractor, Supplier or anyone for whom CONTRACTOR is responsible created any Hazardous Environmental Condition at the Site or in connection with the Work.

D. If CONTRACTOR encounters a Hazardous Environmental Condition at the Site or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition at the Site, CONTRACTOR shall immediately:

1. secure or otherwise isolate such condition;
2. stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6. 15); and
3. notify CITY and DESIGN PROFESSIONAL (and promptly thereafter confirm such notice in writing). CITY shall promptly consult with DESIGN PROFESSIONAL concerning the necessity for CITY to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall neither resume Work nor be required to resume Work in connection with such condition or in any affected area until after CITY has obtained any required permits related thereto and delivered to CONTRACTOR written notice:

1. specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or
2. specifying any special conditions under which such Work may be resumed safely. If CITY and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price pursuant to Article 11 and/or Contract Times to

pursuant to Article 12 as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, a Claim may be made therefore as provided in Article 16.

F. If after receipt of written notice as required in Paragraph 4.06 E, CONTRACTOR does not agree to resume Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under special conditions specified in the notice, then CITY may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If CITY and CONTRACTOR cannot agree as to entitlement to or magnitude of an equitable adjustment in Contract Price pursuant to Article 11 and/or Contract Times pursuant to Article 12 as a result of deleting such portion of the Work, then a Claim may be made therefore as provided in Article 16. CITY may have such deleted portion of the Work performed by CITY's own forces or others in accordance with Article 7.

G. The provisions of Paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

H. All materials used, whether new or salvaged, shall be asbestos-free materials. CONTRACTOR shall immediately call to the attention of the CITY's Representative any specified material or product which the CONTRACTOR knows or suspects to contain asbestos, whether new or salvaged.

ARTICLE 5 BONDS AND INSURANCE

5.01 Performance, Payment and Other Bonds

A. CONTRACTOR shall furnish Performance and Maintenance and Payment Bonds, each in an amount at least equal to the Contract Price, as set out in the Contract Documents, as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one (1) year after the date when final payment of the Contract becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations. A certified copy of the agent's authority to act must accompany all Bonds signed by an agent.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirement of Paragraph 5.01 B, CONTRACTOR shall within twenty (20) days thereafter substitute another Bond and surety, both of which must be acceptable to CITY.

5.02 Licensed Sureties and Insurers

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by CITY or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed in the State of Missouri and in the jurisdiction in which the Project is located, if not in Missouri, to issue Bonds or insurance policies for the limits and coverages so required. All surety and insurance companies shall hold an A.M. Best rating of A-, V, or better.

5.03 Certificates of Insurance

A. CONTRACTOR shall deliver to CITY and DESIGN PROFESSIONAL, prior to the start of any Work at the Project Site, properly completed certificates of insurance or other evidence that the required insurance is in full force and effect, in a form acceptable to CITY. The receipt or acceptance of a certificate of insurance that does not incorporate the required terms and coverage shall not constitute a waiver by the City of the insurance requirements contained in the Contract Documents.

B. All policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained by CONTRACTOR in accordance with Paragraphs 5.04 and 5.06 will contain waiver provisions in accordance with Paragraph 5.07 A. The certificates of insurance will contain a provision stating that should any of the policies described in the certificate be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

C. If the coverage afforded is cancelled or changed or its renewal is refused, CONTRACTOR shall give at least thirty (30) days prior written notice to CITY and to each other additional insured to whom a certificate of insurance has been issued.

5.04 CONTRACTOR's Liability Insurance

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and furnished, and will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance and furnishing of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed or furnished by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform or furnish any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;
4. claims for damages insured by customary personal injury liability coverage;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefore; and
6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by Paragraph 5.04 A, to be purchased and maintained shall:

1. with respect to insurance required by Paragraphs 5.04 A.3 through 5.04 A.5 inclusive, include as additional insureds (subject to any customary exclusion for professional liability) CITY, DESIGN PROFESSIONAL, Consultants and any other individuals or entities identified in the Supplementary Conditions to be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
2. include at least the specific coverages and be written for not less than the limits of liability provided in Paragraph 5.04 C or required by Laws or Regulations, whichever is greater;
3. include completed operations insurance;
4. include contractual liability insurance covering CONTRACTOR's indemnity obligations;
5. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with Paragraphs 13.06 and 13.07;

6. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two (2) years after final payment (and CONTRACTOR shall furnish CITY and each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued evidence satisfactory to CITY and any such additional insured of continuation of such insurance);

7. contain a cross-liability or severability of interest clause or endorsement. Insurance covering the specified additional insureds shall be primary insurance, and all other insurance carried by the additional insureds shall be excess insurance;

8. with respect to commercial automobile liability, commercial general liability, and umbrella liability insurance, CONTRACTOR shall require its insurance carrier(s) to waive all rights of subrogation against CITY, and CITY's officers, directors, partners, employees and agents; and

9. contain a provision or endorsement that the costs of providing the insureds a defense and appeal, including attorneys' fees, as insureds, shall be supplementary and shall not be included as part of the policy limits but shall remain the insurer's responsibility.

C. Specific policies of insurance required by this Paragraph 5.04 shall include:

1. Workers' Compensation and Employers' Liability Insurance. This insurance shall protect CONTRACTOR against all claims under applicable state workers' compensation laws, including coverage as necessary for the benefits provided under the United States Longshoremen's and Harbor Workers' Act and the Jones Act. CONTRACTOR shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of workers' compensation laws. This policy shall include an "all states" or "other states" endorsement. The liability limits shall be not less than:

Workers' Compensation: Statutory

Employers' liability: \$1,000,000 each occurrence

2. Commercial Automobile Liability Insurance. This insurance shall be occurrence type written in comprehensive form and shall protect CONTRACTOR, and CITY, DESIGN PROFESSIONAL and Consultants against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles, either on or off the Project Site, whether they are owned, non-owned, or hired.

The liability limits shall be not less than: \$2,000,000

3. Commercial General Liability Insurance. This insurance shall be occurrence type written in comprehensive form acceptable to CITY. This insurance shall protect CONTRACTOR, and CITY, DESIGN PROFESSIONAL and Consultants as additional insureds, against claims arising from injuries, sickness, disease, or death of any person or damage to property arising out of performance of the Work. The policy shall also include coverage for personal injury liability; contractual liability; completed operations and products liability; and for blasting, explosion, and collapse of buildings; and damage to underground property. The liability limits for bodily injury and property damage shall be not less than:

\$2,000,000 combined single limit for each occurrence

\$2,000,000 general aggregate.

4. The insurer's costs of providing the insureds a defense and appeal as additional insureds, including attorney's fees, shall be supplementary and shall not be included as part of the policy limits but shall remain the insurer's separate responsibility.

5.05 CITY's Liability Insurance

A. In addition to the insurance required to be provided by CONTRACTOR under Paragraph 5.04, CITY, at CITY's option, may purchase and maintain at CITY's expense liability insurance

that will protect CITY against claims which may arise from operations under the Contract Documents.

5.06 Property Insurance

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain property insurance on the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws or Regulations). This insurance shall:

1. include the interests of CITY, CONTRACTOR, Subcontractors, and any other persons or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, tornado, collapse, debris removal, demolition occasioned by enforcement of Laws or Regulations, water damage, damage caused by frost and freezing, and acts of God;

3. be maintained in effect until final payment is made unless otherwise agreed to in writing by CITY with thirty (30) days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. CITY shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR, Subcontractors or others involved in the Work to the extent of any deductible amounts. The risk of loss within the deductible amounts will be borne by CONTRACTOR, Subcontractor or others suffering any such loss and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.07 Waiver of Rights

A. CITY and CONTRACTOR intend that all policies purchased in accordance with Paragraphs 5.04 and 5.06 will protect CITY, CONTRACTOR, DESIGN PROFESSIONAL Consultants, Subcontractors, and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds in such policies and will provide primary coverage for all losses and damages caused by the perils covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. CITY and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees and agents for all losses and damages caused by, arising out of or resulting from any of the perils covered by such policies and any other property insurance applicable to the Work, but only to the extent of insurance coverage; and, in addition, waive all such rights against DESIGN PROFESSIONAL, Consultants, Subcontractors, and all other persons or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of any and each of them) under such policies for losses and damages so caused and covered by insurance. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by CITY as trustee or otherwise payable under any policy so issued. None of the above waivers shall apply if specifically in conflict with Laws and Regulations.

5.08 Receipt and Application of Insurance Proceeds

A. Any insured loss under the property insurance will be adjusted with CITY and made payable to CITY as fiduciary for the insureds, as their interests may appear, subject to the requirements of any indentures of indebtedness entered into by CITY.

B. CITY as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object to CITY's exercise of this power in writing within fifteen (15) days after the occurrence of loss. If such objection is made, CITY as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, CITY as fiduciary shall adjust and settle the loss with the insurers.

5.09 Partial Utilization – Property Insurance

A. If CITY finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with Paragraph 14.05; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 CONTRACTOR'S RESPONSIBILITIES

6.01 Indemnification

A. For purposes of this Paragraph 6.01 only, the following terms shall have the meanings listed:

1. Claims means all claims, damages, liability, losses, costs and expenses, including court costs and reasonable attorneys' fees, including attorney's fees incurred by the City in the enforcement of this indemnity obligation.

2. CONTRACTOR'S Agents means CONTRACTOR's officers, employees, sub-consultants, subcontractors, successors, assigns, invitees, and other agents.

3. CITY means CITY, its Program Manager/Construction Advisor and any of their agents, officials, officers, employees and program managers or construction advisors.

B. CONTRACTOR's obligations under this Paragraph with respect to indemnification for acts or omissions, including negligence, of CITY, shall be limited to the coverage and limits of insurance that CONTRACTOR is required to procure and maintain under this Contract. CONTRACTOR affirms that it has had the opportunity to recover the costs of the liability insurance required in this Contract in its contract price.

C. CONTRACTOR shall defend, indemnify and hold harmless CITY from and against all Claims arising out of or resulting from all acts or omissions in connection with this Contract caused in whole or in part by CONTRACTOR or CONTRACTOR's Agents, regardless of whether or not caused in part by any act or omission, including negligence, of OWNER.

D. In any and all Claims against CITY, DESIGN PROFESSIONAL, CONSULTANT, or any of their respective agents, officers, directors or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.01 C shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier or other person or organization under workers' compensation acts, disability benefit acts or other employee benefit acts.

E. The indemnification obligations of CONTRACTOR under Paragraph 6.01 C shall not extend to liability arising out of, resulting from, or caused by the professional negligence, errors or omissions of DESIGN PROFESSIONAL, CONSULTANT, or any of their respective agents, officers, directors or employees.

6.02 Supervision and Superintendence

A. CONTRACTOR shall supervise, inspect and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or specification of a specific means, method, technique, sequence or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent of the Work, who shall not be replaced without written request to and approval by CITY except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

C. If it is determined to be in the best interest of the Work, CONTRACTOR shall replace the project manager, resident superintendent or any other employee of the CONTRACTOR, Subcontractors, Suppliers or other persons or organizations performing or furnishing any of the Work on the project upon written request by the CITY.

6.03 Services, Working Hours, Labor, Materials and Equipment

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out and construct or perform the Work as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the Site shall be performed during regular working hours. CONTRACTOR shall not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without CITY's written consent given after prior written notice to DESIGN PROFESSIONAL.

B. Unless otherwise specified in Division 1, General Requirements, CONTRACTOR shall furnish and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

C. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of CITY. If required by DESIGN PROFESSIONAL, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, used, cleaned and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents.

D. It is the policy of the CITY that any manufactured goods or commodities used or supplied in the performance of this Contract and any subcontract hereto shall be manufactured or produced in the United States whenever possible.

6.04 Progress Schedule

A. CONTRACTOR shall adhere to the progress schedule established in accordance with Article 2 as it may be adjusted from time to time as provided below:

1. CONTRACTOR shall provide, at least once every thirty (30) calendar days, updated information on the project schedule, including thirty (30) day look ahead schedules, projected variances per event category and per Subcontractor, identification of all variances and calculation of the number of Days difference between the as-built critical path and the project schedule critical path

2. CONTRACTOR shall, with each application for payment, provide completed monthly updated status report for the previous month on the project schedule and updated information indicating as-built and as-planned conditions. The updated information on the project schedule shall not modify any Milestone dates in the project schedule that CITY has previously approved. The updated information required is a condition precedent to payment pursuant to paragraph 14.02 and shall include at a minimum:

- a. a concise statement of the outlook for meeting project schedule dates and the reasons for any change in outlook from the previous report;
- b. a review of any significant technical problems encountered during the month;
- c. an explanation of any corrective action taken or proposed; and
- d. a summary of any Claims anticipated by CONTRACTOR with respect to the Work, including the anticipated costs and schedule impacts of any such Claims.

6.05 Recovery Schedules

A. If the CONTRACTOR should:

1. fail, refuse or neglect to supply a sufficient number of workers or to deliver the materials or equipment with such promptness as to prevent the delay in the progress of the Work;

2. fail in any respect to commence and diligently prosecute the Work in accordance with the approved baseline project schedule in order to achieve substantial completion;

3. fail to commence, prosecute, finish, deliver or install the different portions of the Work on time as specified in the approved baseline project schedule; or

4. fail in the performance of any of the material covenants of the Contract Documents;

CITY shall have the right to direct the CONTRACTOR, upon seven (7) calendar days notice, to prepare a written recovery plan, for CITY's approval, to accelerate the Work in order to conform to the approved baseline project schedule, including, without limitation, providing additional labor or expediting delivery of materials, performing overtime or re-sequencing the Work without adjustments to the Contract value. Upon CITY's approval of the recovery plan, CONTRACTOR shall accelerate the Work in accordance with the plan.

B. Proposed recovery schedules shall be submitted to the CITY as a separate project plan for review and approval by CITY prior to incorporation into the approved baseline schedule. The recovery schedule shall be submitted in a format compatible with the baseline schedule format. Each proposed revision shall be submitted as a separate schedule, with the following minimum requirements:

1. A critical path method diagram showing revised and affected activities or Milestones.
2. An activity report for all revised and affected activities or Milestones.

C. Upon acceptance of the recovery schedule by CITY, data shall be added or revised for all new or revised activities and incorporated into the approved baseline project schedule.

6.06 Substitutes and "Or-Equal" Items

A. Materials or equipment: Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance and quality required. Unless the specification or description contains, or is followed by, words reading that no like, equivalent or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to CITY for review by CITY's Representative under the following circumstances:

1. "Or-Equal": If, prior to receipt of Bids, Bidder proposes an item of material or equipment as functionally equal to that named and sufficiently similar so that no change in related Work will be required, CITY's Representative may request DESIGN PROFESSIONAL to consider it as an "or-equal" item. DESIGN PROFESSIONAL will review and recommend the acceptance, or rejection, of the proposed item to the CITY's Representative. For the purposes of this Paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment DESIGN PROFESSIONAL determines that:

(1) it is at least equal in quality, durability, appearance, strength, and design characteristics; and

(2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; and

b. Bidder certifies that:

(1) there is no increase in cost to the CITY; and

(2) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

If the CITY's Representative approves the proposed item, it may be accepted by CITY.

2. Substitute Items: If CONTRACTOR proposes an item of material or equipment as a substitute item, then CONTRACTOR shall submit sufficient information as provided below to allow CITY's Representative to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. The procedure for review by the CITY's Representative will include the following as supplemented in the General Requirements and as CITY's Representative may determine is appropriate under the circumstances:

a. Requests for review of proposed substitute items of material or equipment will not be accepted by CITY's Representative from anyone other than CONTRACTOR.

b. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall first make written application to CITY's Representative for acceptance thereof.

c. In the application, CONTRACTOR shall certify that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified and be suited to the same use as that specified. The application will state the extent, if any, to which the evaluation and acceptance of the proposed substitute will impact CONTRACTOR's achievement of Substantial Completion, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with CITY for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.

d. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by CITY's Representative in evaluating the proposed substitute. CITY's Representative may require CONTRACTOR to furnish additional data about the proposed substitute.

If the CITY's Representative approves the proposed item, CITY may accept it.

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to DESIGN PROFESSIONAL. CONTRACTOR shall notify CITY and submit sufficient information to allow DESIGN PROFESSIONAL, in DESIGN PROFESSIONAL's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents.

C. Expenses: Bidder shall provide all data in support of any "or equal" at Bidder's expense, and CONTRACTOR shall provide all data in support of any proposed substitute at CONTRACTOR's expense.

D. Evaluation: DESIGN PROFESSIONAL and CITY's Representative will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.06 A, and 6.06 B. CITY will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized without CITY's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. CITY may require CONTRACTOR to furnish at CONTRACTOR's expense, a special performance guarantee or other surety with respect to any "or-equal" substitute. DESIGN PROFESSIONAL will record time required by DESIGN PROFESSIONAL and Consultants in evaluating substitutes proposed or submitted by CONTRACTOR pursuant to Paragraphs 6.06 A and 6.06 B and in making changes in the Contract Documents (or in the provisions of any other direct contract with CITY for work on the Project) occasioned thereby. Whether or not CITY accepts a substitute so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse CITY for the reasonable charges of DESIGN PROFESSIONAL and Consultants for evaluating each such proposed substitute.

6.07 Concerning Subcontractors, Suppliers and Others

A. CONTRACTOR shall not employ or retain any Subcontractor, Supplier or other person or organization (including those acceptable to CITY as indicated in Paragraph 6.07 B), whether initially or as a substitute, against whom CITY has a reasonable objection, including but not limited to debarment by City or another governmental entity or decertification of the Subcontractor from the City's Minority and Women's Business Enterprise Program as a result of the Subcontractor's failure to comply with any of the requirements of the provisions of Chapter 3 of the City's Code as determined by the Director of the Human Relations Department. Contractor shall insert this provision in any subcontractor agreement associated with this Contract. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection. CONTRACTOR shall submit required information for all Subcontractors on Form 01290.09 - Subcontractor and Major Material Suppliers List, provided in these Contract Documents, prior to Subcontractor beginning Work at the Site.

B. The Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials or equipment) to be submitted to CITY on or before the date specified in the Supplementary Conditions, for acceptance by CITY. If CONTRACTOR has submitted a list

thereof in accordance with the Supplementary Conditions, CITY may accept (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Contract Documents) any such Subcontractor, Supplier or other person or organization so identified, or may reject same on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier or other person or organization. The Contract Price will be adjusted by the difference in the cost occasioned by such substitution, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by CITY of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of CITY or DESIGN PROFESSIONAL to reject defective Work.

C. CONTRACTOR shall be fully responsible to CITY for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier or other person or organization any contractual relationship between CITY or DESIGN PROFESSIONAL and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of CITY or DESIGN PROFESSIONAL to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws or Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall contractually require all Subcontractors, Suppliers and such other persons and organizations performing or furnishing any of the Work to communicate with CITY and DESIGN PROFESSIONAL through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier shall be pursuant to an appropriate written agreement between CONTRACTOR and the Subcontractor or Supplier that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of CITY. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against CITY, CONTRACTOR, DESIGN PROFESSIONAL, Consultants and all other additional insureds for all losses and damages caused by, arising out of or resulting from any perils, to the extent covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

H. Except as otherwise provided in this subsection H and in accordance with the provisions of subsection C hereof, the agreement between CONTRACTOR and the Subcontractor or Supplier referred to in subsection G, shall provide that the CONTRACTOR and the Subcontractor or Supplier agree not to request CITY or CITY's Representative to intervene in or facilitate the resolution of claims or contract disputes arising out of or related to the agreement between CONTRACTOR and the Subcontractor or Supplier. Furthermore, the Contracts between CONTRACTOR and Subcontractors or Suppliers shall provide that all unresolved claims and disputes between CONTRACTOR and the Subcontractor or Supplier that remain unresolved after thirty (30) calendar days from the notice of claim, shall be subject to mediation as a condition precedent to the institution of legal proceedings by either party. Any such mediation shall be conducted in accordance with the CITY's Code Section 3-467.

I. CONTRACTOR shall not insert any provision in any subcontractor agreement associated with this Contract that explicitly states or implies that the subcontractor shall only be paid for work performed if or when the general CONTRACTOR is paid by the CITY . Contractor's compliance with this provision is a material term of this Contract.

6.08 Patent Fees and Royalties

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation into the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work, and if to the actual knowledge of CITY or DESIGN PROFESSIONAL its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by CITY in the Contract Documents. To the fullest extent permitted by Laws or Regulations, CONTRACTOR shall defend, indemnify and hold harmless CITY, DESIGN PROFESSIONAL, Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or resulting from any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation into the Work of any invention, design, process, product or device not specified in the Contract Documents.

6.09 Permits

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. CITY shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Contract. CONTRACTOR shall pay all charges of utility owners for connections to the Work.

B. CONTRACTOR, at its own expense, shall comply with all Federal, State and local laws and regulations, including, but not limited to the Missouri Clean Water Law (Chapter 644 RSMo) together with any accompanying regulation(s) contained in the Missouri Code of State Regulations (CSR Title 10), as well as any implementing permits, together with any CITY Provisions during the life of this Contract including but not limited to:

1. Approvals and permits as required for construction or land disturbance activities.
2. Compliance with the State of Missouri – Department of Natural Resources (“MDNR”) Missouri State Operating Permit (“Land Disturbance Permit”), MO-R100006 for all construction or land disturbance activity.
3. Development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).
 - (a) Contractor shall not commence land disturbance activity until the initial SWPPP has been finalized.
 - (b) Preparation and submittal of all applications, documentation and exhibits required to obtain MDNR approvals for uninterrupted Work at the Site.
 - (c) Amending/Updating SWPPP.
 - (d) Site Inspections and submittal of Inspection Reports
 - (e) Proper Operation and Maintenance to achieve compliance with the terms of the Permit.

(f) Maintenance of required records in accordance with MDNR requirements and requirements included in Article 6 of these Contract Documents.

4. In addition to requirements of Article 6, Contractor shall also provide record access to Missouri Department of Natural Resources (MDNR).

5. Failure to control erosion and water pollution is a permit violation. CONTRACTOR shall have 24 hours after receiving notice of the violation to correct the problem. If the CONTRACTOR fails to correct the problem after the time prescribed, the City will hire a remediation expert to fix the problem. In such an event, the CONTRACTOR shall be liable to the City for the remediation costs plus a 10% mark-up of the total contract price. If the CONTRACTOR receives three (3) notices of violation of the erosion control plan and the City's MS4 permit, the Director may issue a stop work order and delay any payment until control measures are properly functioning and stream damage has been mitigated. In such an event, any delay to the project schedule will result in liquidated damages assessed against the CONTRACTOR.

6.10 Compliance with Laws and Regulations

A. CONTRACTOR shall give all notices and comply with all Laws or Regulations applicable to furnishing and performing the Work. Except where otherwise expressly required by applicable Laws or Regulations, neither CITY nor DESIGN PROFESSIONAL shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations. The Laws or Regulations included in this Paragraph shall include, but not be limited to, those set forth in the Supplementary Conditions.

B. Failure to Comply. If CONTRACTOR performs any Work in violation of applicable Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting therefrom; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws or Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under Paragraph 3.03.

C. Conflicts of Interest. The provisions of City's Code Sections 2-1015 and 3-301, prohibiting City officers and employees from having a financial or personal interest in any contract with City, and Code Sections 3-307, and 3-309, imposing sanctions for violations, shall apply to this Contract. CONTRACTOR certifies that no officer or employee of City has, or will have, a direct or indirect financial or personal interest in this Contract, and that no officer or employee of City, or member of such officer's or employee's immediate family, either has negotiated, or has or will have an arrangement concerning employment to perform services on behalf of CONTRACTOR on this Contract.

D. Licenses and Permits. CONTRACTOR, at its own expense, shall secure or cause to be secured all licenses and permits from public or private sources necessary for the fulfillment of its obligations under this Contract. All references in this Contract to the "Code" shall mean City's Code of Ordinances, including any amendments thereto or re-codification thereof unless the context clearly indicates otherwise. CONTRACTOR shall obtain copies of all necessary licenses and permits from Subcontractors required for the Work before Subcontractors begin Work at the Site. CONTRACTOR shall retain such evidence in its files and make available to CITY within ten (10) days after CITY's written request.

E. Americans with Disabilities Act. CONTRACTOR agrees to comply, during the course of this Contract, with all provisions of Title II of the 2010 ADA Standards for Accessible Design as amended from time to time.

F. Affirmative Action. If the Contract Price exceeds \$300,000.00 and CONTRACTOR employs fifty (50) or more people, CONTRACTOR shall comply with City's Affirmative Action requirements in accordance with the provisions of Chapter 3 of City's Code, the rules and regulations relating to those sections, and any additions or amendments thereto.

CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, color, sex, religion, national origin or ancestry, disability, sexual orientation, gender identity or age in a manner prohibited by Chapter 3 of City's Code.

CONTRACTOR shall:

1. Submit, in print or electronic format, a copy of CONTRACTOR'S current certificate of compliance to the City's Human Relations Department (HRD) prior to receiving the first payment under the contract, unless a copy has already been submitted to HRD at any point within the previous two calendar years. If, and only if, CONTRACTOR does not possess a current certification of compliance, CONTRACTOR shall submit, in print or electronic format, a copy of its affirmative action program to HRD prior to receiving the first payment under the contract, unless a copy has already been submitted to HRD at any point within the previous two calendar years.

2. Require any Subcontractor awarded a subcontract exceeding \$300,000.00 to affirm that Subcontractor has an affirmative action program in place and will maintain the affirmative action program in place for the duration of the subcontract.

3. Obtain from any Subcontractor awarded a subcontract exceeding \$300,000.00 a copy of the Subcontractor's current certificate of compliance and tender a copy of the same, in print or electronic format, to HRD within thirty (30) days from the date the subcontract is executed. If, and only if, Subcontractor does not possess a current certificate of compliance, CONTRACTOR shall obtain a copy of the Subcontractor's affirmative action program and tender a copy of the same, in print or electronic format, to HRD within thirty (30) days from the date the subcontract is executed.

City has the right to take action as directed by City's Human Relations Department to enforce this provision. If CONTRACTOR fails, refuses or neglects to comply with the provisions of Chapter 3 of City's Code, then such failure shall be deemed a total breach of this Contract and this Contract may be terminated, canceled or suspended, in whole or in part, and CONTRACTOR may be declared ineligible for any further contracts funded by City for a period of one (1) year. This is a material term of this Contract.

G. Minority and Women Business Enterprises and Workforce. City is committed to ensuring that minorities and women participate to the maximum extent possible in the performance of City's construction contracts. If minority and women business enterprise (M/WBE) goals have been set for this Contract, CONTRACTOR agrees to comply with all requirements of City's Minority and Women's Business Enterprise Program as enacted in City's Code, Sections 3-421 through 3-469 and as hereinafter amended. CONTRACTOR shall meet or exceed both the MBE and WBE goals set forth in its Contractor Utilization Plan/Request for Waiver. If workforce utilization goals are applicable to this Contract, CONTRACTOR agrees to comply with all requirements of City's Construction Employment Program as enacted in City's Code, Sections 3-501 through 3-525 and as hereinafter amended. CONTRACTOR shall meet or exceed the construction employment goals unless the same shall have been waived in the manner provided by law. CONTRACTOR's compliance with this provision is a material part of this Contract.

H. Records.

1. For purposes of this section:

(a) "City" shall mean the City Auditor, the City's Internal Auditor, the City's Director of Human Relations, the City Manager, the City department administering this Contract and their delegates and agents.

(b) "Record" shall mean any document, book, paper, photograph, map, sound recordings or other material, regardless of physical form or characteristics, made or received in connection with this Contract and all Contract amendments and renewals.

2. Contractor shall maintain and retain all Records for a term of five (5) years that shall begin after the expiration or termination of this Contract and all Contract amendments. City

shall have a right to examine or audit all Records and Contractor shall provide access to City of all records upon ten (10) days written notice from the City.

I. Prevailing Wage.

1. CONTRACTOR shall comply and require its Subcontractors to comply with;
 - a. sections 290.210 to 290.340, RSMO the State of Missouri Prevailing Wage Law (the "Law"); and
 - b. 8 CSR 30-3.010 to 8 CSR 30-3.060, the Prevailing Wage Law Rules (the "Rules"); and
 - c. the Annual Wage Order (Wage Order) issued by the State of Missouri's Department of Labor and Industrial Relations; and
 - d. any applicable Annual Incremental Wage Increase (Wage Increase) to the Annual Wage Order.

2. The Law, Rules, Annual Wage Order and any Wage Increase are incorporated into and made part hereof this Contract and shall be collectively referred to in this Section as the "Prevailing Wage Requirements."

3. CONTRACTOR shall pay and require its Subcontractors to pay to all workers performing work under this Contract not less than the prevailing hourly rate of wages for the class or type of work performed by the worker in accordance with the Law, Rules, Wage Order and any applicable Wage Increase. CONTRACTOR shall take whatever steps are necessary to insure that the prevailing hourly wage rates are paid and that all workers for CONTRACTOR and each of its Subcontractors are paid for the class or type of work performed by the worker in accordance with the Prevailing Wage Requirements. If CONTRACTOR shall fail to start to perform CONTRACTOR's obligations under the Contract Documents within sixty (60) days from the Effective Date of the Contract, CONTRACTOR and each of its subcontractors shall be obligated to pay all workers in accordance with any new Wage Order, as subsequently amended by any applicable Wage Increase, issued by the Department of Labor and Industrial Relations within the aforementioned sixty (60) day period. The new Wage Order and any applicable Wage Increase shall govern notwithstanding the fact that the Wage Order being replaced might be physically attached or incorporated in the Contract Documents.

4. Prior to each of its Subcontractors beginning Work on the Site, CONTRACTOR shall require each Subcontractor to complete CITY's Form 00490 entitled "Pre-contract Certification" that sets forth the Subcontractor's prevailing wage and tax compliance history for the two (2) years prior to the bid. CONTRACTOR shall retain one (1) year and make the Pre-contract Certifications available to CITY within five (5) days after written request.

5. CONTRACTOR shall:

- a. Keep and require each of its Subcontractors engaged in the construction of public works in performance of the Contract to keep full and accurate records on City's "Daily Labor Force Report" Form indicating the worker's name, occupational title or classification group & skill and the workers' hours. City shall furnish blank copies of the Daily Labor Force Report Form to Contractor for its use and for distribution to Subcontractors. Contractor shall submit its and its Subcontractors Daily Labor Force Reports to City each day; and

- b. Submit, and require each of its Subcontractors engaged in the construction of public works in performance of the Contract to submit electronically, in a format prescribed by the City, Certified Payroll Report Information indicating the worker's name, address, social security number, occupation(s), craft(s) of every worker employed in connection with the public work together with the number of hours worked by each worker and the actual wages paid in connection with the Project and other pertinent information as requested by the City; and

c. Submit, and require each of its Subcontractors engaged in the construction of public works in performance of the Contract to submit, electronically, in format prescribed by the City, a Payroll Certification. The Payroll Certification must be signed by the employee or agent who pays or supervises the payment of the workers employed under the Contract for the Contractor and each Subcontractor; and

d. The Daily Labor Force Report, documents used to compile information for the Certified Payroll Report, and Payroll Certification are collectively referred to in this Section as the "Records."

6. CONTRACTOR shall submit its and its Subcontractors Daily Labor Force Reports to CITY each day. CONTRACTOR shall make all of CONTRACTOR's and Subcontractors' Records open to inspection by any authorized representatives of OWNER and the Missouri Department of Labor and Industrial Relations at any reasonable time and as often as they may be necessary and such Records shall not be destroyed or removed from the State of Missouri for a period of one (1) year following the completion of the public work in connection with which the Records are made. CONTRACTOR shall have its and its Subcontractors Certified Payroll Reports and Payroll Certifications available at the CONTRACTOR's office and shall provide the Records to the City electronically at City's sole discretion. In addition, all Records shall be considered a public record and CONTRACTOR shall provide the Records to the CITY in the format required by the CITY within three (3) working days of any request by CITY at the CONTRACTOR's cost. CITY, in its sole discretion, may require CONTRACTOR to send any of the Records directly to the person who requested the Record at CONTRACTOR's expense.

7. CONTRACTOR shall post and keep posted a clearly legible statement of all prevailing hourly wage rates to be paid to all workers employed by CONTRACTOR and each of its Subcontractors in the performance of this Contract in a prominent and easily accessible place at the Site of the Work by all workers.

8. If the Contract Price exceeds \$250,000.00, CONTRACTOR shall and shall require each Subcontractor engaged in any construction of public works to have its name, acceptable abbreviation or recognizable logo and the name of the city and state of the mailing address of the principal office of the company, on each motor vehicle and motorized self-propelled piece of equipment which is used in connection with the Project during the time the CONTRACTOR or Subcontractor is engaged on the project. The sign shall be legible from a distance of twenty (20') feet, but the size of the lettering need not be larger than two (2") inches. In cases where equipment is leased or where affixing a legible sign to the equipment is impractical, the CONTRACTOR may place a temporary stationary sign, with the information required pursuant to this section, at the main entrance of the Project in place of affixing the required information on the equipment so long as such sign is not in violation of any state or federal statute, rule or regulation. Motor vehicles which are required to have similar information affixed thereto pursuant to requirements of a regulatory agency of the state or federal government are exempt from the provisions of this subsection.

9. CONTRACTOR must correct any errors in CONTRACTOR's or any Subcontractors' Records, or CONTRACTOR's or any Subcontractors' violations of the Law, Rules, Annual Wage Order and any Wage Increase within fourteen (14) calendar days after notice from CITY.

10. CONTRACTOR shall and shall require its Subcontractors to cooperate with the CITY and the Department of Labor and Industrial Relations in the enforcement of this Section, the Law, Rules, Annual Wage Order and any Wage Increase. Contractor shall and shall require its Subcontractors to permit CITY and the Department of Labor and Industrial Relations to interview any and all workers during working hours on the Project at CONTRACTOR's sole cost and expense.

11. CONTRACTOR shall file with CITY, upon completion of the Project and prior to final payment therefore, affidavits from CONTRACTOR and each of its Subcontractors, stating

that each has fully complied with the provisions and requirements of the Missouri Prevailing Wage Law. CITY shall not make final payment until the affidavits, in proper form and order, from CONTRACTOR and each of its Subcontractors, are filed by CONTRACTOR.

12. CONTRACTOR shall forfeit as a statutory penalty to the CITY one hundred dollars (\$100.00) for each worker employed, for each calendar day, or portion thereof, such worker is paid less than the prevailing hourly rates for any work done under this Contract, by CONTRACTOR or by any of CONTRACTOR's Subcontractors. If CONTRACTOR or any of its Subcontractors have violated any section(s) of 290.210 to 290.340, RSMo, in the course of the execution of the Contract, CITY shall when making payments to the CONTRACTOR becoming due under this Contract, withhold and retain therefrom all sums and amounts due and owing as a result of any violation of sections 290.210 to 290.340, RSMo.

J. Prevailing Wage Damages. CONTRACTOR acknowledges and agrees that, based on the experience of CITY, violations of the Missouri Prevailing Wage Act, whether by CONTRACTOR or its Subcontractors, commonly result in additional costs to CITY. CONTRACTOR agrees that additional costs to CITY for any particular violation are difficult to establish and include but are not limited to: costs of construction delays, additional work for CITY, additional interest expenses, investigations, and the cost of establishing and maintaining a special division working under the City Manager to monitor prevailing wage compliance.

1. In the event of the failure by CONTRACTOR or any of its Subcontractors to pay wages as provided in the Missouri Prevailing Wage Act, CITY shall be entitled to deduct from the Contract Price, and shall retain as liquidated damages, one hundred dollars (\$100.00) per day, per worker who is paid less than the prevailing hourly rate of wages, to approximate the additional costs. The sum shall be deducted, paid or owed whether or not the Contract Times have expired.

2. CITY shall give written notice to CONTRACTOR setting forth the workers, who have been underpaid, the amount of the statutory penalty and the amount of the liquidated damages as provided for in this Subparagraph J. CONTRACTOR shall have fourteen (14) calendar days to respond, which time may be extended by CITY upon written request. If CONTRACTOR fails to respond within the specified time, the CITY's original notice shall be deemed final. If CONTRACTOR responds to CITY's notice, CITY will furnish CONTRACTOR a final decision in writing within five (5) days of completing any investigation.

K. Missouri Secretary of State Business Entity Registration. CONTRACTOR shall obtain from all Subcontractors for the Project, a copy of their current certificate of good standing or fictitious name registration from the Missouri Secretary of State before they begin work on the Site. CONTRACTOR shall retain such documents in its files and make available to CITY within ten (10) days after written request.

L. Tropical Hardwoods. The provisions of Code Section 2-1872, restricting the use of tropical hardwoods, shall apply to this Contract.

M. Preference for Missouri Products. Pursuant to Section 71.140 RSMo., preference shall be given to materials, products, supplies and all other articles produced, manufactured, made or grown within the State of Missouri.

N. Guidelines for Open Excavations.

1. CONTRACTOR shall restore required excavations to the level of the adjacent surfaces as soon as practicable. Unsupervised open excavations on public properties are discouraged at all times. If CONTRACTOR, in performance of the Work, makes or causes to be made any excavation in, upon, under, through or adjoining any street, sidewalk, alley, park, boulevard, parkway or any other public properties, and shall leave any part or portion thereof open, CONTRACTOR shall provide effective protection to the public.

2. CONTRACTOR shall protect and secure all excavations in roadways in compliance with existing federal, state and local codes and standards, including, but not limited to the

most current edition of the Manual of Uniform Traffic Control Devices. CONTRACTOR shall protect and secure all unsupervised excavations not within roadways, either by covering or fencing.

a. Covering. A protective cover that can sustain the weight of persons or of objects that are placed upon it may be installed over an unsupervised excavation. The cover shall be secured to the ground to prevent movement. Protective covers shall have no opening(s) or protuberance(s) of sufficient size to cause a fall and/or injury. Advance warning devices shall be installed as necessary.

b. Fencing. Fencing to prevent entry may be installed surrounding an unsupervised excavation not protectively covered in its entirety. The fencing shall be a minimum of 42" in height. The fencing shall be constructed in such a manner that it is adequately secured and will remain upright at all times under normal Site conditions. All protective coverings and fences over and around excavations shall be inspected at least daily to assure integrity. Protective coverings and/or fences in heavily trafficked areas shall be inspected more often as necessary.

O. Notification of Utilities. CONTRACTOR shall adhere to the provisions of Sections 319.010 et seq., RSMo., which requires that a person or firm making an excavation in any public street, road or alley, right of way dedicated to public use, utility easement of record, or within any private street or private property do so only after giving notice to, and obtaining information from, owners of Underground Facilities. The 24-hour, toll-free accident prevention hotline number in Missouri is 1-800-344-7483 (1-800-Digrite).

P. Employee Eligibility Verification. CONTRACTOR shall adhere to the provisions of Sections 285.525 et seq., RSMo., which requires that for any contract exceeding five thousand dollars (\$5,000.00), CONTRACTOR shall execute and submit an affidavit, in a form prescribed by CITY, affirming that CONTRACTOR does not knowingly employ any person in connection with the contracted services who does not have the legal right or authorization under federal law to work in the United States as defined in 8 U.S.C. § 1324a(h)(3). CONTRACTOR shall attach to the affidavit documentation sufficient to establish CONTRACTOR'S enrollment and participation in an electronic verification of work program operated by the United States Department of Homeland Security (E-Verify) or an equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, under the Immigration Reform and Control Act of 1986. CONTRACTOR may obtain additional information about E-Verify and enroll at <https://e-verify.uscis.gov/enroll/StartPage.aspx?JS=YES>. For those Contractors enrolled in E-Verify, the first and last pages of the E-Verify Memorandum of Understanding that CONTRACTOR will obtain upon successfully enrolling in the program shall constitute sufficient documentation for purposes of complying with this Section. CONTRACTOR shall submit the affidavit and attachments to CITY prior to execution of the Contract, or at any point during the term of the Contract if requested by City.

Q. OSHA 10-Hour Training Requirement. CONTRACTOR and any subcontractor working under this Contract shall require every employee on the Site to complete a ten-hour construction safety program which meets the requirements of Section 292.675, RSMo, except for those employees who shall have previously completed the required program and hold documentation to that effect. CONTRACTOR shall remove or require the removal of any person from the Site who is subject to this requirement and who does not complete or is unable to produce documentation of their successful completion of the required program within the time limitations prescribed by Section 292.675, RSMo. CONTRACTOR shall forfeit the sum of two thousand five hundred dollars (\$2,500.00), in addition to one hundred dollars (\$100.00) per employee each calendar day, or portion thereof, the employee(s) shall continue to be employed without having completed the required program within the time limitations prescribed by Section 292.675, RSMo. CITY shall be entitled to withhold and retain any amounts due and owing hereunder when making payment to CONTRACTOR.

R. Clean Air Act and Clean Water Act. CONTRACTOR shall comply with requirements of the Clean Air Act (42 U.S.C. 7401 *et seq.*); Clean Water Act (33 U.S.C. 1251 *et seq.*), Missouri Clean Water Law (Chapter 644 RSMo), Code of Federal regulations (Title 40: Protection of Environment, Title 33: Navigation and Navigable Waters) and the rules of the Missouri Code of State Regulations (CSR Title 10).

6.11 Taxes

A. CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws or Regulations of the place of the Project which are applicable during the performance of the Work.

B. Tax Compliance.

1. As a condition precedent to CITY making its first payment to CONTRACTOR under this Contract, CONTRACTOR shall furnish to CITY sufficient proof from City's Commissioner of Revenue, dated not more than one (1) year prior to the date provided to CITY, verifying that CONTRACTOR is in compliance with the license and tax ordinances administered by City's Revenue Division of the Finance Department.

2. As a condition precedent to Subcontractors performing any Work under this Contract, CONTRACTOR shall obtain from Subcontractor sufficient proof from City's Commissioner of Revenue, dated not more than one (1) year before the date Subcontractor begins Work, verifying that the Subcontractor is in compliance with the license and tax ordinances administered by City's Revenue Division of the Finance Department. CONTRACTOR shall retain such documentation in its files and make available to CITY within ten (10) days after a written request.

3. As a condition precedent to CITY making final payment under this Contract, if this Contract is longer than one (1) year and exceeds the dollar threshold established by ordinance and included in the Supplementary Conditions, CONTRACTOR shall furnish to CITY sufficient proof from City's Commissioner of Revenue, dated not more than one (1) year before the filing of a final Application for Payment, verifying that CONTRACTOR is in compliance with the license and tax ordinances administered by City's Revenue Division of the Finance Department.

4. If this Contract is longer than one (1) year and exceeds the dollar threshold established by ordinance and included in the Supplementary Conditions, CONTRACTOR shall obtain from Subcontractors sufficient proof from City's Commissioner of Revenue, dated not more than one (1) year before the date of CONTRACTOR's final payment to the Subcontractor, that the Subcontractor was or is in compliance with the license and tax ordinances administered by City's Revenue Division of the Finance Department. CONTRACTOR shall retain such documentation in its files and make available to CITY within ten (10) days after written request.

5. If, at the time of final payment to CONTRACTOR, CONTRACTOR is unable to obtain from all its Subcontractors, if any, and furnish to CITY sufficient proof from City's Commissioner of Revenue that all its Subcontractors are in compliance with the license and tax ordinances administered by City's Revenue Division of the Finance Department, CITY may approve final payment to CONTRACTOR if CITY determines that CONTRACTOR has made a good faith effort to furnish evidence or that there are other extenuating circumstances which make it impossible for CONTRACTOR to furnish sufficient proof.

C. Missouri Sales Tax Exemption. Pursuant to Section 144.062, RSMo, CITY is a Missouri exempt entity and tangible personal property to be incorporated or consumed in the construction of this Project may be purchased without sales tax. CITY shall furnish CONTRACTOR a Missouri Project Exemption Certificate for Sales Tax at the time of issuance of the Notice to Proceed.

6.12 Use of Site and Other Areas

A. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas identified in and permitted by the Contract Documents and other areas permitted by Laws or Regulations. CONTRACTOR shall not unreasonably encumber the Site and the other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to the Site or the other areas, or to the owner or occupant thereof, or of any adjacent land or areas, resulting from the performance of the Work.

B. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law. In case of a failure on the part of the CONTRACTOR to restore such property or to make good such damage or injuries, the CITY may, upon forty-eight (48) hours written notice to the CONTRACTOR, repair, rebuild or otherwise restore such property as the CITY may deem necessary, and the cost thereof will be deducted from any moneys due or which may become due the CONTRACTOR under this Contract.

C. CONTRACTOR shall, to the fullest extent permitted by Laws or Regulations, defend, indemnify and hold harmless CITY, DESIGN PROFESSIONAL, Consultants and the officers, directors, employees, agents and other consultants of each and any of them from and against all claims, costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or resulting from any claim or action, legal or equitable, brought by any such owner or occupant against CITY, DESIGN PROFESSIONAL or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

D. During the progress of the Work, CONTRACTOR shall keep the Site and the other areas free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from Site and other areas as well as all tools, appliances, construction equipment and machinery and surplus materials. CONTRACTOR shall leave the Site clean and ready for utilization or occupancy by CITY at Substantial Completion of the Work. CONTRACTOR shall restore to all property not designated for alteration by the Contract Documents to its pre-Work condition.

E. CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.13 Record Documents

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, the Contract, Written Amendments, Change Orders, Work Change Directives, and written interpretations and clarifications in good order and annotated to show all changes made during construction. These record documents, together with all approved Samples and a counterpart of all approved Shop Drawings, will be available to CITY and DESIGN PROFESSIONAL for reference. Upon completion of the Work, these record documents, Samples and Shop Drawings will be delivered to DESIGN PROFESSIONAL for CITY.

6.14 Safety and Protection

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall comply with all applicable Laws or Regulations relating to the safety of persons or property to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for safety

and protection. CONTRACTOR shall deliver to CITY a copy of CONTRACTOR'S Health and Safety Plan as provided in the Notice of Intent to Contract.

B. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in Paragraph 6.14 B.2 or 6.14 B.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of CITY, DESIGN PROFESSIONAL, Consultant, or anyone employed by any of them or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR, Subcontractor, Supplier or other person or organization directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and DESIGN PROFESSIONAL has issued a notice to CONTRACTOR in accordance with Paragraph 14.07 that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion). CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of the Work.

6.15 Safety Representative

A. In accordance with OSHA standards, CONTRACTOR shall designate a qualified and experienced safety representative whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs. CONTRACTOR's safety representative shall remain at the Site whenever there is Work in progress and shall immediately notify CITY of any emergencies or accidents occurring at the Site

6.16 Hazard Communication Programs

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.17 Emergencies

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR, without special instruction or authorization from CITY or DESIGN PROFESSIONAL, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give CITY and DESIGN PROFESSIONAL prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If CITY determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to an emergency, a Work Change Directive or Change Order will be issued.

B. A change in the Contract Documents pursuant to Paragraph 6.15 A will not be an automatic authorization of, nor a condition precedent to, entitlement to adjustment in the Contract Price or Contract Times. If CITY and CONTRACTOR are unable to agree on

entitlement to, or magnitude of, an equitable adjustment in the Contract Price or Contract Times, a Claim may be made therefore as provided in Article 16. However, OWNER, DESIGN PROFESSIONAL and Consultants shall not be liable to CONTRACTOR for any costs, losses or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

6.18 Shop Drawings and Samples

A. CONTRACTOR shall submit Shop Drawings to DESIGN PROFESSIONAL for review and approval in accordance with the accepted schedule of Shop Drawings and Sample submittals (see Paragraph 2.07). All submittals shall be identified as DESIGN PROFESSIONAL may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show DESIGN PROFESSIONAL the services, materials and equipment CONTRACTOR proposes to provide and to enable DESIGN PROFESSIONAL to review the information for the limited purposes required by Paragraph 6.18 D.

B. CONTRACTOR shall also submit Samples to DESIGN PROFESSIONAL for review and approval in accordance with said accepted schedule of Shop Drawings and Sample submittals. Each Sample shall be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended and otherwise as DESIGN PROFESSIONAL may require to enable DESIGN PROFESSIONAL to review the submittal for the limited purposes required by Paragraph 6.18 D. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Submittal Procedures:

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submission, CONTRACTOR shall give DESIGN PROFESSIONAL specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, the notice to be in a written communication separate from the submittal, and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to DESIGN PROFESSIONAL for review and approval of each such variation.

D. DESIGN PROFESSIONAL's Review:

1. DESIGN PROFESSIONAL will review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals accepted by DESIGN PROFESSIONAL as required by Paragraph 2.06. DESIGN PROFESSIONAL's

review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation into the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. DESIGN PROFESSIONAL's review and approval will not extend to means, methods, techniques, sequences or procedures of construction (except where a particular means, method, technique, sequence or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. DESIGN PROFESSIONAL's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called DESIGN PROFESSIONAL's attention to each such variation at the time of submission as required by Paragraph 6.18 C.3, and DESIGN PROFESSIONAL has given written approval of each such variation by specific written notation thereof incorporated into or accompanying the Shop Drawing or Sample approval; nor will any approval by DESIGN PROFESSIONAL relieve CONTRACTOR from responsibility for complying with the requirements of Paragraph 6.18 C.1.

E. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submissions accepted by DESIGN PROFESSIONAL as required by Paragraph 2.06, any related Work performed prior to DESIGN PROFESSIONAL's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

F. CONTRACTOR shall make corrections required by DESIGN PROFESSIONAL and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by DESIGN PROFESSIONAL on previous submittals.

6.19 Continuing the Work

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with CITY. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as CITY and CONTRACTOR may otherwise agree in writing.

6.20 CONTRACTOR's General Warranty and Guarantee

A. CONTRACTOR warrants and guarantees to CITY, DESIGN PROFESSIONAL and Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers or any other individual or entity for whom CONTRACTOR is responsible; or
2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by DESIGN PROFESSIONAL;
2. recommendation of any progress or final payment by DESIGN PROFESSIONAL;

3. the issuance of a certificate of Substantial Completion or any payment related thereto by CITY to CONTRACTOR;
4. use or occupancy of the Work or any part thereof by OWNER;
5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by DESIGN PROFESSIONAL;
6. any inspection, test or approval by others; or
7. any correction of defective Work by CITY.

C. Nonconforming Work is rejected unless expressly accepted in writing by the CITY's Representative.

ARTICLE 7 OTHER WORK

7.01 Related Work at Site

A. CITY may perform other work related to the Project at the Site by CITY's own forces, or let other direct contracts therefore, or have other work performed by utility owners. If such other work is to be performed and such fact was not noted in the Contract Documents, then:

1. Written notice thereof will be given to CONTRACTOR prior to starting any such other work, and
2. CONTRACTOR may make a Claim therefore as provided in Article 16 if CONTRACTOR believes that such performance involves additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the amount or extent thereof.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract, and each utility owner (and CITY, if CITY is performing the additional work with CITY's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly connect and coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of CITY and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between CITY and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to CITY and DESIGN PROFESSIONAL in writing any delays, defects or deficiencies in such other work that render it unavailable or unsuitable for the proper execution or results of CONTRACTOR's Work. CONTRACTOR's failure to report same will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work, except for latent or non-apparent defects and deficiencies in such other work.

7.02 Coordination

A. If CITY contracts with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the person, firm or corporation who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized;
and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, CITY shall have sole authority and responsibility in respect of such coordination.

ARTICLE 8 CITY'S RESPONSIBILITIES

8.01 Communications to CONTRACTOR

A. Except as otherwise provided in these General Conditions, CITY shall issue all communications to CONTRACTOR.

8.02 Replacement of DESIGN PROFESSIONAL

A. In case of termination of the employment of DESIGN PROFESSIONAL, CITY shall appoint a DESIGN PROFESSIONAL whose status under the Contract Documents shall be that of the former DESIGN PROFESSIONAL.

8.03 Furnish Data and Prompt Payment

A. CITY shall promptly furnish the data required of OWNER under the Contract Documents and shall make payments to CONTRACTOR when they are due.

8.04 Lands and Easements; Reports and Tests

A. CITY's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to CITY's duty to identify and make available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the Site and drawings of physical conditions in existing structures at or contiguous to the Site that have been utilized by DESIGN PROFESSIONAL in preparing the Contract Documents.

8.05 Insurance

A. CITY's responsibilities, if any, for purchasing and maintaining liability and property insurance are set forth in Article 5 and the Supplementary Conditions.

8.06 Change Orders

A. CITY is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.07 Inspections, Tests and Approvals

A. CITY's responsibility for certain inspections, tests and approvals is set forth in Paragraph 13.02 F.

8.08 Limitations on CITY's Responsibilities

A. The CITY shall not supervise, direct or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws or Regulations applicable to the furnishing or performance of the Work. CITY will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

8.09 Undisclosed Hazardous Environmental Condition

A. CITY's responsibility for an undisclosed Hazardous Environmental Condition uncovered or revealed at the Site is set forth in Paragraph 4.06.

8.10 Evidence of Financial Arrangements

A. CITY will furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract.

8.11 CITY's Representative

A. CITY will provide a representative during the construction period. The duties, responsibilities and the limitations of authority of the CITY "'s Representative during construction are set forth in the Contract Documents.

8.12 Visits to Site

A. CITY's Representative will make visits to the Site at intervals appropriate to the various stages of construction as CITY's Representative deems necessary in order to observe the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, CITY's Representative will endeavor to determine, in general, if the Work is proceeding in accordance with the Contract Documents. CITY's Representative will not be required to make exhaustive or continuous on-Site inspections to check the quality or quantity of the Work.

ARTICLE 9 DESIGN PROFESSIONAL's STATUS DURING CONSTRUCTION

9.01 General Scope of DESIGN PROFESSIONAL's Duties

A. DESIGN PROFESSIONAL's efforts will be directed toward providing for CITY a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of visits to the Site and on-Site observations, DESIGN PROFESSIONAL will keep CITY informed of the progress of the Work and will endeavor to guard CITY against defective Work. DESIGN PROFESSIONAL's visits to the Site and on-Site observations are subject to all the limitations on DESIGN PROFESSIONAL's authority and responsibility set forth in Paragraph 9.08.

9.02 Resident Project Representative

A. If CITY and DESIGN PROFESSIONAL agree, DESIGN PROFESSIONAL will furnish a resident Project representative to assist DESIGN PROFESSIONAL in providing more extensive observation of the Work. The responsibilities, authority and limitations thereon of any such resident Project representative and assistants will be as provided in Paragraph 9.08 and in the Supplementary Conditions.

9.03 Clarifications and Interpretations

A. DESIGN PROFESSIONAL will issue with reasonable promptness written clarifications or interpretations (which may be in the form of Drawings) of the requirements of the Drawings and Specifications prepared by the DESIGN PROFESSIONAL as DESIGN PROFESSIONAL may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on CITY and CONTRACTOR. If CITY or CONTRACTOR believes that a written clarification or interpretation justifies an adjustment in the Contract Price pursuant to Article 11 and/ or the Contract Times pursuant to Article 12 and the parties are unable to agree to the amount or extent thereof, if any, a Claim may be made therefore as provided in Article 16.

9.04 Rejecting Defective Work

A. DESIGN PROFESSIONAL will have authority to disapprove or reject Work which DESIGN PROFESSIONAL believes to be defective, that DESIGN PROFESSIONAL believes will not produce a completed Project that conforms to the Contract Documents, or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. DESIGN PROFESSIONAL will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04 B, whether or not the Work is fabricated, installed or completed.

9.05 Shop Drawings, Change Orders and Payments

A. In connection with DESIGN PROFESSIONAL's authority as to Shop Drawings and Samples, see Paragraph 6.18.

B. In connection with DESIGN PROFESSIONAL's authority as to Change Orders, see Article 10.

C. In connection with DESIGN PROFESSIONAL's authority as to Applications for Payment, see Article 14.

9.06 Determinations for Unit Prices

A. DESIGN PROFESSIONAL will initially determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. DESIGN PROFESSIONAL will review with CONTRACTOR the DESIGN PROFESSIONAL's preliminary determinations on such matters before rendering a written opinion thereon (by recommendation of an Application for Payment or otherwise to the CITY). CITY reserves the right to make a final determination of the actual quantities and classifications of Unit Price Work in reviewing an Application for Payment. Within ten (10) days after the date of receipt of any such decision, CONTRACTOR may deliver to CITY and to DESIGN PROFESSIONAL written notice of intention to appeal CITY's decision pursuant to Article 16.

9.07 Decisions on Requirements of Contract Documents and Acceptability of Work

A. DESIGN PROFESSIONAL will be the initial interpreter of the requirements of the Drawings and Specifications prepared by DESIGN PROFESSIONAL and judge of the acceptability of the Work thereunder.

B. When functioning as interpreter and judge under this Paragraph 9.07, DESIGN PROFESSIONAL will not show partiality to OWNER or CONTRACTOR.

C. Claims, disputes and other matters relating to the acceptability of the Work, quantities and classifications of Unit Price Work, or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work will be referred initially to CITY's Representative in writing with a request for a formal decision in accordance with Article 16.

9.08 Limitations on DESIGN PROFESSIONAL's Authority and Responsibilities

A. Neither DESIGN PROFESSIONAL's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by DESIGN PROFESSIONAL in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise or performance of any authority or responsibility by DESIGN PROFESSIONAL shall create, impose or give rise to any duty owed by DESIGN PROFESSIONAL to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them.

B. DESIGN PROFESSIONAL will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws or Regulations applicable to the furnishing or performance of the Work. DESIGN PROFESSIONAL will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

C. DESIGN PROFESSIONAL will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

D. DESIGN PROFESSIONAL's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, Bonds and certificates of inspection, tests and approvals and other documentation required to be delivered by Paragraph 14.07 will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests and approvals, that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.08 shall also apply to DESIGN PROFESSIONAL's Consultants, resident Project representative and assistants as identified in the Supplementary Conditions.

ARTICLE 10 CHANGES IN THE WORK

10.01 Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, CITY may, at any time or from time to time, order additions, deletions or revisions in the Work. Such additions, deletions or revisions will be authorized by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved that will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If CITY and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price pursuant to Article 11 or an adjustment of the Contract Times pursuant to Article 12 or both that should be allowed as a result of a Work Change Directive, a Claim may be made therefore as provided in Article 16.

10.02 Unauthorized Changes in the Work

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.17 or in the case of uncovering Work as provided in Paragraph 13.04.

10.03 Signing of Change Orders

A. CITY and CONTRACTOR, and DESIGN PROFESSIONAL shall sign appropriate Change Orders covering:

1. changes in the Work which are:
 - a. ordered by CITY pursuant to Paragraph 10.01 A; or
 - b. required because of acceptance of defective Work under Paragraph 13.08 or correcting defective Work under Paragraph 13.09; or
 - c. agreed to by the parties;
2. changes in the Contract Price or Contract Times or both which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
3. changes in the Contract Price or Contract Times or both which embody the substance of any written decision recommended by DESIGN PROFESSIONAL and approved by CITY pursuant to Paragraph 9.06, provided that, in lieu of signing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws or Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in Paragraph 6.19.

10.04 Notification to Surety

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times or both) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11 CHANGE OF CONTRACT PRICE

11.01 Change of Contract Price

A. The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at CONTRACTOR's expense without change in the Contract Price.

B. The Contract Price may only be changed by a Change Order. Any request for an adjustment in the Contract Price shall be based on written notice delivered within fourteen (14) calendar days after occurrence of the event giving rise to the request or within fourteen (14) calendar days after first recognition of the conditions giving rise to the request. Prior notice is not required for requests or claims relating to an emergency endangering life or property as described in Paragraph 6.16. Thereafter, the CONTRACTOR shall submit written documentation of its request, including appropriate supporting documentation, within ten (10) calendar days after giving notice, unless the CITY grants an extension based on good cause shown by the CONTRACTOR that such additional time is warranted.

C. The value of any Work covered by a Change Order or of any request for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by Unit Prices contained in the Contract Documents, by application of such Unit Prices to the quantities of the items involved (subject to the provisions of Paragraph 11.04); or

2. where the Work involved is not covered by Unit Prices contained in the Contract Documents, by a mutually agreed lump sum; or

3. where the Work involved is not covered by Unit Prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 11.01 C.2, on the basis of the Cost of the Work (determined as provided in Paragraphs 11.02 A and B) plus a CONTRACTOR's fee for overhead and profit (determined as provided in Paragraph 11.01 D).

D. The CONTRACTOR's fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.02 A.1 and 11.02 A.2, the CONTRACTOR's fee shall be ten percent (10%);

b. for costs incurred under Paragraph 11.02 A.3, the CONTRACTOR's fee shall be five percent (5%);

c. where one or more tiers of subcontracts are on the basis of the Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01 D.2 and 11.02 A.1 through A.3 is that the Subcontractor who actually performs or furnishes the Work, at whatever tier, will be paid a fee of ten percent (10%) of the costs incurred by such Subcontractor under Paragraphs 11.02 A.1 and 11.02 A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent (5%) of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.02 A.4, 11.02 A.5 and 11.02 B;

e. the amount of credit to be allowed by CONTRACTOR to CITY for any change which results in a net decrease in cost will be the amount of the actual net decrease in costs plus a deduction in CONTRACTOR's fee by an amount equal to five percent (5%) of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.01 D.2.a through 11.01 D.2.e, inclusive.

E. Whenever the Cost of the Work is to be determined pursuant to Paragraphs 11.02 A and B, CONTRACTOR shall establish and maintain records thereof in accordance with generally accepted accounting practices and submit in form acceptable to CITY an itemized cost breakdown together with supporting data.

11.02 Cost of the Work

A. The term "Cost of the Work" means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a request for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the request. Except as otherwise agreed to in writing by CITY, costs covered by Change Orders or requests shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any costs itemized in 11.02 B:

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work, using occupational titles and job classifications agreed upon by CITY and CONTRACTOR. Such employees shall include, without limitation, job Site superintendents, foremen and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing the Work after regular working hours, on Saturdays, Sundays or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated into the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless CITY deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to CITY. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to CITY, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed or furnished by Subcontractors. If required by CITY, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to CITY who will then determine, with the advice of DESIGN PROFESSIONAL, which bids, if any, will be accepted. If any subcontract provides that the Subcontractor is to be paid on the basis of the Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in Paragraphs 11.01 D and E and 11.02 A and B. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work when such services are approved in advance by CITY in writing.

5. Other costs including the following:

a. The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the Site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by CITY with the advice of DESIGN PROFESSIONAL, and the costs of transportation, loading, unloading, installation, assembly, dismantling and removal thereof, all in accordance with the terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

d. Applicable sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws or Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses required to perform the Work.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by CITY in accordance with Article 5), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of CITY. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for those services a fee proportionate to that stated in Paragraph 11.01 D.2.

g. The cost of utilities, fuel and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage and similar petty cash items in connection with the Work.

i. Cost of premiums for additional or increased Bonds, or for insurance required because of approved changes in the Work.

B. Costs excluded: The term "Cost of the Work" shall not include any of the following:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the Site or in CONTRACTOR's principal or a branch office for general administration of the Work (if not specifically included in the agreed upon occupational titles and job classifications referred to in Paragraph 11.02 A.1 or specifically covered by Paragraph 11.02 A.4), all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials, or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 11.02 A.

11.03 Cash Allowances

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be furnished and performed for such sums as may be acceptable to CITY. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued by CITY to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.04 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Contract. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made in accordance with Paragraph 9.06.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. CITY or CONTRACTOR may negotiate an adjustment of the price per unit of Unit Price Work stated in the Contract if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs by twenty percent (20%) or more from the estimated quantity of such item indicated in the Contract; and

2. there is no corresponding adjustment with respect to any other item of Work; and

3. CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or CITY believes that CITY is entitled to a decrease in Contract Price.

11.05 Dispute Resolution

A. If CITY and CONTRACTOR are unable to agree on entitlement to, or magnitude of, an equitable adjustment in the Contract Price in accordance with Article 11 within fourteen (14) calendar days from the receipt of supporting documentation of the request pursuant to 11.01.B., unless the CITY grants an extension based on good cause shown by the CONTRACTOR that such additional time is warranted, then a Claim for such adjustment may be made pursuant to Article 16.

ARTICLE 12 CONTRACT TIMES

12.01 Time of the Essence

- A. All times stated in the Contract Documents are of the essence of the Contract.

12.02 Change of Contract Times

A. The Contract Times (or Milestones) may only be changed by a Change Order. Any request for an adjustment in the Contract Times shall be based on written notice delivered within fourteen (14) calendar days after occurrence of the event giving rise to the request or within fourteen (14) calendar days after first recognition of the conditions giving rise to the request. Thereafter, the CONTRACTOR shall submit written documentation of its requests, including appropriate supporting documentation, within ten (10) days after giving notice, unless the CITY grants an extension based on good cause shown by the CONTRACTOR that such additional time is warranted.

12.03 Proof Required To Justify an Extension of Time For Excusable and Compensable Delays

A. In support of any request for an extension of the Contract Times pursuant to this Article, CONTRACTOR must demonstrate to the reasonable satisfaction of the CITY that the critical path of the approved baseline project schedule was delayed. CONTRACTOR shall be entitled to an increase in contract time for the number of days that the critical path was delayed solely as a result of the compensable or excusable event. A compensable or excusable event includes, but is not limited to:

1. unreasonable delay of issuance of Notice to Proceed by CITY;
2. CITY's unreasonable delay of delivery furnished materials, equipment, or work;
3. unreasonable delay responding to shop drawings and submittals;
4. CITY's unreasonable delay in issuing a Change Order;
5. an order by the CITY to stop the Work where the CONTRACTOR was not at fault;
and
6. other reasonable grounds as determined by the City in its sole discretion.

B. CONTRACTOR shall compare the critical path of the approved baseline project schedule to the actual critical path of the Work, identifying the specific impact of the compensable or excusable event.

C. CONTRACTOR shall submit to the CITY a written time impact analysis illustrating the influence of each compensable or excusable event on the date of Substantial Completion. The time impact analysis shall demonstrate the time impact based on the date of the delay in time and the event time computations or all affected activities.

D. If the critical path of the Work is delayed by "Force Majeure", the CONTRACTOR shall be entitled only to an extension of the Contract Times for the number of days of delay to the critical path. For purposes of this paragraph, "Force Majeure" shall mean fire, tornado, flood, earthquake, war, act of terrorism, civil disturbance, or labor strikes away from the project site.

E. Extensions of contract time pursuant to this section will be granted only to the extent that the time adjustments exceed the total float time available when the event causing the delay occurred.

12.04 Delays Within CONTRACTOR's Control

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 Delays Beyond the CITY's and CONTRACTOR's Control

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both CITY and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 Delay Damages

A. In no event shall CITY be liable to CONTRACTOR, any Subcontractor, any Supplier, any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR, or
2. delays beyond the control of CITY or CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this Paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inaction of CITY, DESIGN PROFESSIONAL, Consultant or anyone for whom CITY, DESIGN PROFESSIONAL or Consultant is responsible.

12.07 Dispute Resolution

A. If CITY and CONTRACTOR are unable to agree on entitlement to, or magnitude of, an equitable adjustment in the Contract Time in accordance with Article 12 within fourteen (14) calendar days from the receipt of supporting documentation of the request pursuant to 12.02, unless the CITY grants an extension based on good cause shown by the CONTRACTOR that such additional time is warranted, then a Claim for such adjustment may be made pursuant to Article 16.

ARTICLE 13 TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Access to Work

A. CITY, DESIGN PROFESSIONAL, Consultants, other representatives and personnel of CITY, independent testing laboratories and governmental agencies with jurisdictional interests will have access to the Site and Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.02 Tests and Inspections

A. CONTRACTOR shall give DESIGN PROFESSIONAL and CITY's Representative timely notice of readiness of the Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. If any Work (or the work of others at the Site) that is to be inspected, tested or approved is covered by CONTRACTOR without written approval required by Paragraphs 13.02 D or 13.02 E, it must, if requested by CITY's Representative, be uncovered for observation.

C. Uncovering Work as provided in Paragraph 13.02 B, shall be at CONTRACTOR's expense unless CONTRACTOR has given DESIGN PROFESSIONAL and CITY's Representative timely notice of CONTRACTOR's intention to cover the same and DESIGN PROFESSIONAL and CITY's Representative have not acted with reasonable promptness in response to such notice.

D. If Laws or Regulations of any public body (including City) having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other

representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, pay all costs in connection therewith, and furnish DESIGN PROFESSIONAL and CITY's Representative the required certificates of inspection or approval.

E. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for CITY's and DESIGN PROFESSIONAL's acceptance of materials or equipment to be incorporated into the Work, or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation into the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to CITY and DESIGN PROFESSIONAL.

F. CITY shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests or approvals covered by Paragraph 13.02 D and E;
2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04 B shall be paid as provided in said Paragraph 13.04 B; and
3. as otherwise specifically provided in the Contract Documents.

13.03 Notice of Defects

A. Prompt notice of all defective Work of which either CITY or DESIGN PROFESSIONAL has actual knowledge will be given to CONTRACTOR. Defective Work may be rejected, corrected or accepted as provided in this Article 13.

13.04 Uncovering Work

A. If any Work (or the work of others at the Site) is covered contrary to the written request of DESIGN PROFESSIONAL or CITY's Representative, it must, if requested by CITY's Representative, be uncovered for DESIGN PROFESSIONAL's or CITY's Representative's observation and replaced at CONTRACTOR's expense.

B. If CITY considers it necessary or advisable that covered Work be observed by DESIGN PROFESSIONAL or CITY's Representative or be inspected or tested by others, CONTRACTOR, at CITY's request, shall uncover, expose or otherwise make available for observation, inspection or testing as may be required, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from such uncovering, exposure, observation, inspection and testing and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and CITY shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, CITY may make a Claim therefore as provided in Article 16. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefore as provided in Article 16.

13.05 CITY May Stop the Work

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, CITY may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of CITY to stop the Work shall not give rise to any duty on the part of CITY to

exercise this right for the benefit of CONTRACTOR, any Subcontractor, Supplier, other individual or entity or any surety or employee or agent of any of them.

13.06 Correction or Removal of Defective Work

A. If required by CITY, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by either DESIGN PROFESSIONAL or CITY's Representative, remove it and replace it with Work that is not defective. CONTRACTOR shall pay all costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) caused by or resulting from such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 Correction Period

A. If within one (1) year after the date of Substantial Completion, or such longer period of time as may be prescribed by Laws or Regulations, by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by CITY or permitted by Laws and Regulations as contemplated in Paragraph 6.10 is found to be defective, CONTRACTOR shall promptly, without cost to CITY and in accordance with CITY's written instructions:

1. correct the repair of damages to such land or areas; or
2. correct such defective Work, or if it has been rejected by CITY, remove it from the Site and replace it with Work that is not defective; and
3. satisfactorily correct or remove and replace any damage to other Work or to the work of others or damage to other lands or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in the event of an emergency where delay by CONTRACTOR would cause serious risk of loss or damage, CITY may have the defective Work corrected or the rejected Work removed and replaced, and all costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) caused by or resulting from such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one (1) year, or such longer period of time as may be prescribed within Paragraph 13.07 A, after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or waiver of the provisions of any applicable statute of limitation or repose.

13.08 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, CITY prefers to accept it, CITY may do so. CONTRACTOR shall pay all costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to CITY's evaluation of and determination to accept such defective Work and shall pay OWNER for the diminished value of the Work. If any such acceptance occurs prior to DESIGN PROFESSIONAL's recommendation of final payment, a Change Order will be issued

incorporating the necessary revisions into the Contract Documents with respect to the Work and, due to the diminished value of the Work, CITY shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, CITY may make a Claim therefore as provided in Article 16. If the acceptance of defective Work occurs after such recommendation, an appropriate amount shall be paid by CONTRACTOR to CITY.

13.09 CITY May Correct Defective Work

A. If CONTRACTOR fails within a reasonable time after written notice from DESIGN PROFESSIONAL or CITY's Representative to correct defective Work or to remove and replace rejected Work as required by CITY in accordance with Paragraph 13.06, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, CITY may, after seven (7) days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. CITY shall proceed expeditiously when exercising the rights and remedies under this Paragraph 13.09. In connection with such corrective and remedial action, CITY may exclude CONTRACTOR from all or part of the Site; take possession of all or part of the Work and suspend CONTRACTOR's services related thereto; take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site; and incorporate into the Work all materials and equipment stored at the Site or for which CITY has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow CITY, CITY's Representative, agents and employees, CITY's other contractors, DESIGN PROFESSIONAL and Consultants access to the Site to enable CITY to exercise the rights and remedies under this Paragraph 13.09.

C. All costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by CITY in exercising such rights and remedies will be charged against CONTRACTOR and a Change Order will be issued incorporating the necessary revisions into the Contract Documents with respect to the Work; and CITY shall be entitled to an appropriate decrease in the Contract Price. If CITY and CONTRACTOR are unable to agree as to the amount thereof, CITY may make a Claim therefore as provided in Article 16. Such Claims for costs, losses and damages will include but not be limited to all costs of repair or replacement of work of others destroyed or damaged by correction, removal and replacement of CONTRACTOR's defective or rejected Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by CITY of CITY's rights and remedies under Paragraphs 13.06 and 13.09.

ARTICLE 14 PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

A. 01290.02 Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into form 01290.01 Application for Payment acceptable to DESIGN PROFESSIONAL and CITY. Progress payments for Unit Price Work will be based on the number of units completed.

14.02 Application for Progress Payments

A. Application for Payment

1. At least twenty (20) days before the date stipulated in the Supplementary Conditions for each progress payment (but not more often than once a month), CONTRACTOR shall submit to DESIGN PROFESSIONAL for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated into the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale,

paid invoice or other documentation warranting that CITY has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect CITY's interest therein, all of which will be subject to CITY's approval.

2. Beginning with the second Application for Payment, each Application shall include:

a. an affidavit of CONTRACTOR stating that all previous progress payments received for the Work have been applied to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment, and

b. a copy of the most recent 00485.01 M/WBE Monthly Utilization Report CONTRACTOR has submitted to the CITY's Human Relations Department.

c. a copy of the most recent 00485.02 Project Workforce Monthly Report and 00485.03 Company-Wide Workforce Monthly Report CONTRACTOR has submitted to the OWNER's Human Relations Department.

d. an update to the approved schedule pursuant to paragraphs 6.04 and 6.05.

3. The amount of retainage with respect to progress payments will be stated in the Supplementary Conditions.

B. Review of Applications

1. DESIGN PROFESSIONAL will, within ten (10) days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to CITY, or return the Application to CONTRACTOR indicating in writing DESIGN PROFESSIONAL's reasons for refusing to recommend payment. In the latter case, CONTRACTOR shall make the necessary corrections and resubmit the Application.

a. After presentation of the Application for Payment to CITY, and if CITY's Representative agrees with DESIGN PROFESSIONAL's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02 B.4) become due and will be paid by CITY to CONTRACTOR, subject to the provisions of Laws or Regulations.

b. No payment shall be approved until the CONTRACTOR has submitted with the Application accompanying documentation as required by the Contract Documents, including, but not limited to, the documentation required by paragraphs 6.04 and 6.05.

2. DESIGN PROFESSIONAL's recommendation of any payment requested in an Application for Payment will constitute a representation by DESIGN PROFESSIONAL to CITY, based on DESIGN PROFESSIONAL's observations of the executed Work as an experienced and qualified DESIGN PROFESSIONAL and on DESIGN PROFESSIONAL's review of the Application for Payment and the accompanying data and schedules, that to the best of DESIGN PROFESSIONAL's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.06, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR being entitled to such payment appear to have been fulfilled in so far as it is DESIGN PROFESSIONAL's responsibility to observe the Work.

3. DESIGN PROFESSIONAL's recommendation of any payment, including final payment, shall not mean that DESIGN PROFESSIONAL is responsible for CONTRACTOR's means, methods, techniques, sequence or procedures of construction, safety precautions

and programs incident thereto, or any failure of CONTRACTOR to comply with Laws or Regulations applicable to the furnishing or performance of Work.

4. DESIGN PROFESSIONAL may refuse to recommend the whole or any part of any payment if, in DESIGN PROFESSIONAL's opinion, it would be incorrect to make the representations to CITY referred to in Paragraph 14.02 B.2. DESIGN PROFESSIONAL may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in DESIGN PROFESSIONAL's opinion to protect CITY from loss because:

- a. the Work is defective, or completed Work has been damaged requiring correction or replacement;
- b. the Contract Price has been reduced by Written Amendment or Change Orders;
- c. CITY has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. DESIGN PROFESSIONAL has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.

C. Reduction in Payment

1. CITY may refuse to make payment of the full amount recommended by DESIGN PROFESSIONAL because:

- a. Claims have been made by third parties against CITY on account of CONTRACTOR's performance or furnishing of the Work; or
- b. Claims have been made by CITY against CONTRACTOR in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to CITY to secure the satisfaction and discharge of such Claims;
- c. there are other items entitling CITY to a set-off against the amount recommended; or
- d. CITY has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02 B.4.a through c or 15.02 A.1 through 4; but CITY must give CONTRACTOR written notice (with a copy to DESIGN PROFESSIONAL) stating the reasons for such action and promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by CITY and CONTRACTOR, when CONTRACTOR corrects to CITY's satisfaction the reasons for such action; or
- e. CITY has made a different determination of the actual quantities and classifications of Unit Price Work.

14.03 CONTRACTOR's Warranty of Title

A. CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated into the Project or not, will pass to CITY no later than the time of payment, free and clear of all Liens.

14.04 Substantial Completion

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify CITY and DESIGN PROFESSIONAL in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that CITY issue a certificate of Substantial Completion. Within a reasonable time thereafter, CITY, together with CONTRACTOR and DESIGN PROFESSIONAL, shall make an inspection of the Work to determine the status of completion. If DESIGN PROFESSIONAL does not consider the Work substantially complete, DESIGN PROFESSIONAL will notify CONTRACTOR and CITY in writing giving the reasons therefore. If DESIGN PROFESSIONAL considers the Work substantially complete, DESIGN PROFESSIONAL will prepare and deliver

to CITY a recommended certificate of Substantial Completion that shall establish the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. CITY shall have seven (7) days after receipt of the recommended certificate during which to make written objection to DESIGN PROFESSIONAL as to any provisions of the certificate or attached list. At the time of delivery of the recommended certificate of Substantial Completion, DESIGN PROFESSIONAL will deliver to CITY and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between CITY and CONTRACTOR with respect to security, operation, safety, protection of the Work, maintenance, heat, utilities, insurance and warranties and guarantees.

B. CITY shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but CITY shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 Partial Utilization

A. Use by CITY at CITY's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which CITY, DESIGN PROFESSIONAL and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by CITY for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

1. CITY at any time may request CONTRACTOR in writing to permit CITY to use any such part of the Work which CITY believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to CITY and DESIGN PROFESSIONAL that such part of the Work is substantially complete and request CITY to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify CITY and DESIGN PROFESSIONAL in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request CITY to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, CITY, together with CONTRACTOR and DESIGN PROFESSIONAL, shall make an inspection of that part of the Work to determine its status of completion. If DESIGN PROFESSIONAL does not consider that part of the Work to be substantially complete, DESIGN PROFESSIONAL will notify CITY and CONTRACTOR in writing, giving the reasons therefore. If DESIGN PROFESSIONAL considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work will be accomplished prior to compliance with the requirements of Paragraph 5.09 with respect to property insurance.

14.06 Final Inspection

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, DESIGN PROFESSIONAL will make a final inspection with CITY and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 Final Payment

A. Application for Payment

1. After CONTRACTOR has completed all corrections required by Paragraph 14.06 to the satisfaction of DESIGN PROFESSIONAL and CITY's Representative and delivered in accordance with the Contract Documents all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance required by Paragraph 5.04, certificates of inspection, marked-up record documents (as provided in

Paragraph 6.13) and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation required by the Contract Documents, including but not limited to the evidence of insurance required by Subparagraph 5.04 B.7; and

b. 01290.14 "Contractor Affidavit for Final Payment" from CONTRACTOR and 01290.15 "Subcontractor Affidavit for Final Payment" from all Subcontractors, regardless of tier.

B. Review of Application and Acceptance

1. If, on the basis of DESIGN PROFESSIONAL's and CITY's Representative's observation of the Work during construction and final inspection, and DESIGN PROFESSIONAL's and CITY's Representative's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, DESIGN PROFESSIONAL and CITY's Representative are satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, DESIGN PROFESSIONAL will, within ten (10) days after receipt of the final Application for Payment, indicate in writing DESIGN PROFESSIONAL's and CITY's Representative's recommendation of payment and present the Application to CITY for payment. At the same time DESIGN PROFESSIONAL will also give written notice to CITY and CONTRACTOR that the Work is acceptable subject to the provisions of Paragraph 14.09.

2. Otherwise, DESIGN PROFESSIONAL will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application to DESIGN PROFESSIONAL. After the presentation to CITY of the Application and accompanying documentation, in appropriate form and substance, including applicable federal and state prevailing wage provisions, and with DESIGN PROFESSIONAL's recommendation and notice of acceptability, the amount recommended by DESIGN PROFESSIONAL will become due and will be paid by CITY to CONTRACTOR in accordance with Laws and Regulations.

14.08 Final Completion Delayed

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if DESIGN PROFESSIONAL so recommends and CITY concurs, CITY shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of DESIGN PROFESSIONAL, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by CITY for Work not fully completed or corrected is less than the retainage stipulated in the Supplementary Conditions, and if Bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to DESIGN PROFESSIONAL with the Application for Payment. Payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 Waiver of Claims

A. The making and acceptance of final payment will constitute:

1. a waiver of all claims by CITY against CONTRACTOR, except claims previously made in writing and still unsettled, or claims arising from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against CITY other than those previously made in writing pursuant to Paragraphs 16.02 and 16.03 and still unsettled.

14.10 Completion of Work by CITY

A. If CITY must complete the Work, all costs and charges incurred by CITY, together with the cost of completing the Work under the Contract, will be deducted from any monies due or which may become due CONTRACTOR. If such expense exceeds the sum which would have been payable under the Contract, then CONTRACTOR and the surety shall be liable and shall pay to CITY the amount of such excess.

ARTICLE 15 SUSPENSION OF WORK AND TERMINATION

15.01 CITY May Suspend Work

A. Notwithstanding any other provision of this Contract, at any time and without cause, and at its sole and absolute discretion, CITY, may suspend the Work or any portion of the Work by written notice to CONTRACTOR, which will initially fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed in the notice unless the date is changed by a subsequent written notice from CITY. CONTRACTOR may be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any suspension if CONTRACTOR makes a Claim therefore in accordance with Article 16.

B. CONTRACTOR will not be allowed an adjustment in the Contract Price or an extension of the Contract Times if CITY suspends the Work because CONTRACTOR's acts or omissions create or cause an emergency that CITY believes affects the safety or protection of persons, the Work, or property at the Site or adjacent thereto. CITY may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been adequately addressed by CONTRACTOR; however, this right of CITY to stop the Work shall not give rise to any duty on the part of CITY to exercise this right for the benefit of CONTRACTOR, any Subcontractor, Supplier, other individual or entity or any surety or employee or agent of any of them.

15.02 CITY May Terminate for Default

A. CONTRACTOR may be deemed in default and CITY may terminate the services of CONTRACTOR upon the occurrence of any one or more of the following events:

1. CONTRACTOR fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under Paragraph 2.06 and 2.07 as adjusted from time to time pursuant to Paragraphs 6.04, 6.05, 12.02 and 12.03);

2. CONTRACTOR abandons the Work or declares its intention to abandon the Work;

3. CONTRACTOR assigns or attempts to assign its rights or obligations under this Contract or any part thereof to any third party without the prior written consent of CITY;

4. CONTRACTOR fails to make prompt payment duly owing to any subcontractor for Work completed in accordance to the Contract Documents or material supplier for materials delivered for incorporation into the Work within thirty (30) calendar days after payment was due;

5. CONTRACTOR fails to achieve the required dates of substantial and final completion;

6. CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

7. CONTRACTOR disregards the authority of DESIGN PROFESSIONAL or OWNER;
or

8. CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents.

B. CITY may, after giving CONTRACTOR (and the surety) seven (7) days written notice

and to the extent permitted by Laws or Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the Site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate into the Work all materials and equipment stored at the Site or for which CITY has paid CONTRACTOR but which are stored elsewhere, and finish the Work as CITY may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all costs, losses and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CITY arising out of or resulting from completing the Work, such excess may be paid to CONTRACTOR. If such costs, losses and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to CITY within fourteen (14) calendar days of CITY'S demand for payment. When exercising any rights or remedies under this Paragraph CITY shall not be required to competitively bid this work unless required by law.

C. Where CONTRACTOR's services have been so terminated by CITY, the termination will not affect any rights or remedies of CITY against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by CITY will not release CONTRACTOR from liability.

D. If, after a default termination, it is determined that the CONTRACTOR was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the CITY. The CITY shall then be liable to CONTRACTOR for only those costs enumerated in paragraph 15.03.

15.03 CITY May Terminate for Convenience

A. Notwithstanding any other provision of this Contract, upon seven (7) calendar days written notice to CONTRACTOR, CITY may, at its sole and absolute discretion, without cause and without prejudice to any other right or remedy of CITY, elect to terminate the Contract. In such case, CONTRACTOR shall, with thirty (30) calendar days of receiving notice of termination under this paragraph, submit to CITY its statement of costs and expenses and shall be paid:

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. for all costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and others; and
4. for reasonable expenses directly attributable to termination if approved in advance by CITY.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

C. CONTRACTOR waives any costs not submitted to CITY pursuant to paragraph 15.03.A.

D. CITY shall, within thirty (30) calendar days after receipt of CONTRACTOR's statement, pay CONTRACTOR all amounts it determines are properly determined.

ARTICLE 16 CLAIMS AND DISPUTES

16.01 Definition

A. A Claim is a demand or assertion by the CONTRACTOR seeking, as a matter of right, the adjustment of Contract price and/or times with respect to the terms of the Contract.

16.02 Written Notice and Burden of Proof

A. Claims must be made by written notice pursuant to Paragraph 17.01. The written notice shall clearly indicate that the CONTRACTOR is making a claim. The responsibility to substantiate Claims shall rest with the CONTRACTOR. No Claim may be made under this Contract except as provided in this Article.

B. Certification of Claim: The written notice of Claim shall include the following statement signed by the CONTRACTOR's representative: "The CONTRACTOR certifies that all statements made and the facts set out in this claim are true and correct and that no false records have been submitted in support of this claim." **Strict compliance with this paragraph shall be a condition precedent to the creation, existence or validity of any Claim.**

16.03 Time Limits on Claims

A. The CONTRACTOR must give notice to the CITY within fourteen (14) calendar days after the denial of a request for or failure to reach an agreement on a change in Contract Price and/or change in Contract Time pursuant to Article 11 and Article 12 respectively. After the fourteen (14) day period for making Claims has expired, the Claim shall be considered waived.

B. The CONTRACTOR shall submit the Claim to the CITY's Representative.

16.04 Continuing Contract Performance

A. Pending final resolution of a Claim, unless otherwise agreed in writing, the CONTRACTOR shall proceed diligently with performance of the Work and the CITY shall continue to make payments in accordance with the Contract Documents. The CITY may, but is not obligated to, notify the Surety of the nature and amount of the Claim.

16.05 Injury or Damage to Person or Property

A. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts that party is legally liable, written notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding thirty (30) days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter.

16.06 Initial Resolution of Claims and Disputes

A. After the CONTRACTOR has submitted the Claim to the CITY's Representative, the CITY'S Representative and CONTRACTOR'S Representative shall conduct a settlement conference within fourteen (14) calendar days from the date of receipt of the Claim. If the Claim is not settled within seven (7) calendar days following the date of the settlement conference, the CITY'S Representative and the CONTRACTOR's Representative shall state, in writing, following the conclusion of the seven (7) calendar day period, their respective position as to the matters in dispute.

B. The CITY'S and CONTRACTOR'S statement of positions shall state all known factual grounds for each party's position. If the dispute remains unresolved at the end of the seven (7) calendar days from submission of the parties' written position statements, the CONTRACTOR shall have the right to proceed with the pursuit of Claims pursuant to paragraph 16.07.

C. If a Claim has been resolved, the OWNER will prepare or obtain appropriate documentation.

16.07 Final Resolution of Claims and Disputes

A. All administrative procedures set forth in this contract must first be exhausted before suit is filed.

B. If the CITY'S Representative and the CONTRACTOR'S Representative are unable to resolve the dispute pursuant to 16.06, the parties must submit their statements of position to the Director, who shall review the Claim and make a decision within fourteen (14) calendar days.

C. Absent fraud, gross mistake or bad faith, the Director's decision shall be final and binding on CITY and CONTRACTOR within fourteen (14) calendar days after issuance. The CONTRACTOR shall give written notice to the CITY stating its intent to submit its Claim to a court of law pursuant to paragraph 17.05.A. within thirty (30) calendar days after notice of Director's decision.

D. The time frames for the Director's decision and for CONTRACTOR'S written notice of intent may be tolled by participation in voluntary mediation. Mediator selection and the procedures to be employed in voluntary mediation shall be mutually acceptable to the parties. Costs of the mediator shall be shared equally among the parties participating in the mediation. In no event shall any time frame be tolled more than 30 days for mediation. However, mediation may be employed at any time at the discretion and mutual agreement of the parties.

E. If the dispute is not resolved during voluntary mediation, The CONTRACTOR agrees that it will file no suit based on facts or evidentiary materials that were not presented for consideration to the CITY during the mediation process or of which the CONTRACTOR had knowledge and failed to present during the administrative procedures.

ARTICLE 17 MISCELLANEOUS

17.01 Giving Notice

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be given by personal delivery, by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice or by confirmed electronic facsimile transmission. Notice is effective on the date of personal delivery, deposit of registered or certified mail, postage prepaid, or confirmed electronic facsimile transmission.

17.02 Computation of Times

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last calendar day of such period. If the last day of such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR and all of the rights and remedies available to CITY and DESIGN PROFESSIONAL hereunder are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply.

17.04 Survival of Obligations

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract.

17.05 Controlling Law

A. This Contract shall be construed and governed in accordance with the laws of the State of Missouri without giving effect to Missouri's choice of law provisions. The CITY and CONTRACTOR: (1) shall submit exclusively to the jurisdiction of the state and federal courts

located in Jackson County, Missouri and no other; (2) shall waive any and all objections to jurisdiction and venue; and (3) shall not raise forum non conveniens as an objection to the location of any litigation.



SUPPLEMENTARY CONDITIONS

Project Number 07061111

Project Title Bid Package #6 - ADA Compliance Project for
Parks and Recreation Department Community
Center Facilities

These Supplementary Conditions amend or supplement the General Conditions of the Construction Contract and other provisions of the Contract Documents as indicated below. All provisions that are not so amended or supplemented remain in full force and effect.

SC-2.03 A. Article 2, Paragraph 2.03, Copies of Documents, is amended by deleting Paragraph 2.03 A and replacing it with the following:

- A. CITY shall furnish to CONTRACTOR up to **ONE (1)** copy of the Drawings and Specifications, including Addenda.

SC-5.03 A. Article 5, Paragraph 5.03 Certificates of Insurance, Subparagraph A is amended by adding the following Subparagraph 1:

- 1. CONTRACTOR shall obtain evidence that all Subcontractors have in force the required coverage in the amounts required by these Contract Documents, and evidence that each is current on its unemployment insurance payments before Subcontractors begin Work at the Site. CONTRACTOR shall retain such evidence in its files and make available to CITY within ten (10) days after written request.

SC-5.04 B.1. Article 5, Paragraph 5.04, CONTRACTOR's Liability Insurance, Subparagraph B.1 is amended as follows:

With respect to insurance required by Paragraphs 5.04 A.3 through 5.04 A.5, the following additional individuals or entities shall be listed as additional insureds:

City of Kansas City Missouri
Owning Department
Piper – Wind Architect's, Inc.
Bob D Campbell & Co, Inc.
Tapanam Associates, Inc
SK Design Group, Inc.
FP&C Consultants, Inc.
Young + Dring Landscape Architecture

SC-5.06 A. Article 5, Paragraph 5.06, Property Insurance, Paragraph A, is amended by adding the following after the first sentence:

Property Insurance on the Work at the Site shall be written with a deductible amount not to exceed \$10,000.00.

SC-6.06 A.1 Article 6, Paragraph 6.06 Substitutes and "Or-Equal" Items, Paragraph A is amended by adding the following at the end of Paragraph A.1:

Proposed "or-equal" items must be submitted to CITY at least **11** days prior to Bid date at the following address:

414 E. 12th St. City Hall, 17th Floor
Kansas City, Missouri 64106
Attn: Jenny T. Harriman, Project Manager

Only Bidders may submit proposed "or-equal" items and such items must require no change in related Work. Acceptance by CITY of any proposed "or-equal" items will be made by Addendum only.

SC-6.06 A.2. Article 6, Paragraph 6.06 Substitutes and "Or-Equal" Items, Paragraph A is amended by adding the following at the end of Paragraph A.2:

Proposed substitute items must be submitted to CITY's Representative not later than **14** days prior to the time the item is to be incorporated into the Work. Only CONTRACTOR may submit proposed substitute items, and such items must be submitted to CITY's Representative on the standard City form 01630 - Substitution Request. Acceptance by CITY of any proposed substitute item will be made by Change Order.

SC-6.10. Article 6, Paragraph 6.10, Compliance with Laws and Regulations, is amended by adding the following new Subparagraphs immediately following Subparagraph 6.10 I 2:

a. CONTRACTOR will be required to comply with wage rates as follows:

County – Clay, Jackson
Work Type: State – Building

SC-6.10. Article 6, Paragraph 6.10, Compliance with Laws and Regulations, is amended by adding the following new Subparagraph 6.10 S:

1. "Resident Laborers" means laborers who have been residents of the State of Missouri for at least thirty days and who intend to remain Missouri residents, and residents of Nonrestrictive States.

2. "Nonrestrictive States" means states identified by the Missouri Department of Labor and Industrial Relations Division of Labor Standards that have not enacted state laws restricting Missouri laborers from working on public works projects. A list of Nonrestrictive States can be found on the Division web site at <http://www.dolir.mo.gov/ls/index.htm>.

3. A period of Excessive Unemployment is declared when the Missouri Department of Labor and Industrial Relations Division of Labor Standards provides notice of such declaration. When in effect, notice will be provided on the Division web site at <http://www.dolir.mo.gov/ls/index.htm>. It is CONTRACTOR's obligation to determine whether a period of Excessive Unemployment is in effect when this Contract is let.

4. CONTRACTOR agrees to follow the provisions of Section 290.560 - 290.575 RSMo and agrees that if a period of Excessive Unemployment has been declared at any point during the term of this Contract, it will employ and require all Subcontractors of whatever tier to employ only Resident Laborers for the Work to be performed under this CONTRACT. Provided, however, CONTRACTOR may use laborers who are not Resident Laborers when Resident Laborers are not available or are incapable of performing the particular type of work involved if CONTRACTOR so certifies in writing to CITY and CITY issues a written approval. This provision does not apply to regularly employed nonresident executive, supervisory or technical employees.

SC-6.11. Article 6, Paragraph 6.11, Taxes, is amended by adding the following sentence to Subparagraph 6.11 B:

B. Tax Compliance. The following subparagraphs apply if the Contract is over \$150,000.00.

SC-7.02 A. Article 7, Paragraph 7.02, Coordination, Subparagraph A is supplemented as follows:

1. It is anticipated that work under a separate contract with **Kone Corporation** for elevator maintenance and repair services will be performed at one of Site facilities, concurrent with the Work to be performed pursuant to these Contract Documents. The following person, firm or corporation ("the Coordinating Contractor") will have authority and responsibility for coordination of the activities among the various contractors performing work at the Site: **General Contractor Selected.**
2. The Coordinating Contractor shall coordinate the scheduling of work between this Contract and other concurrent contracts so that interference with the use of existing facilities and public works and conflicts with interfacing work will be minimized. Particular attention shall be paid to maintaining suitable traffic patterns and adequate access to the existing facilities.
3. Whenever construction activities conflict with the use of existing facilities and public works, **the Facility Manager** shall decide which activity shall be given priority. The Coordinating Contractor shall be responsible for coordinating work by its own forces, by other contractors and by all subcontractors with work by the operating staff of the existing facility. The Coordinating Contractor shall exert full control over the actions of all employees and other persons with respect to the use and preservation of property and existing facilities, except such control as may be specifically reserved to CITY or others. The Coordinating Contractor has the right to exclude from the Site all persons who have no purpose related to the Work or its inspection, and may require all person on the Site (except CITY's employees) to observe the same regulations as the Coordinating Contractor requires of its own employees.

SC-9.08 E. Article 9, Paragraph 9.08, Limitations on DESIGN PROFESSIONAL's Authority and Responsibilities, Subparagraph E is supplemented as follows:

DESIGN PROFESSIONAL's Consultant(s), resident Project representative and assistant(s) to the resident Project representative are the following:

Design Professional: Piper – Wind Architect's, Inc

Resident Project representative: Eric J. Piper, AIA.

Assistant(s) to the resident Project representative: Christopher August Martin, AIA, LEED^{AP}

1. Consultant(s): Bob D Campbell & CO, Inc.
Resident Project representative: Richard Crabtree, P.E.
2. Consultant(s): TapanAm Associates, Inc.
Resident Project representative: Ken Diehl, P.E.
Assistant(s) to the resident Project representative: Jeremy Rogers
3. Consultant(s): SK Design Group, Inc.
Resident Project representative: Sassan Mahobian, P.E.
Assistant(s) to the resident Project representative: Pejmon Mahobian

4. Consultant(s): FP&C Consultants, Inc.
Resident Project representative: Jeff Scott, P.E.
5. Consultant(s): Young + Dring Landscape Architecture
Resident Project representative: Chris Dring

SC-12.01 Article 12, Paragraph 12.01, Time of the Essence is amended by adding the following new Subparagraphs immediately following Subparagraph 12.01 A:

B. Starting and Completion

1. The Work to be performed under this Contract shall begin on the date specified in the written Notice to Proceed issued by the Director of General Services, and the Work shall be substantially complete, In accordance with Paragraph 14.04, on or before within **240 Calendar Days** thereafter. Once the Work starts, CONTRACTOR shall continuously pursue completion of the Work.
2. The Work shall be completed and ready for final payment in accordance with Paragraph 14.07 on or before within 30 Calendar Days after the date of Substantial Completion of the Work.

C. Liquidated Damages

1. If the Work is not substantially completed, in accordance with Paragraph 14.04, on or before within the period stated in Paragraph 12.01 B.1., CONTRACTOR shall pay to CITY the amount of **nine hundred (\$900)** as liquidated damages and not as a penalty for each Calendar Day until the Work is substantially complete. The amount of liquidated damages shall be deducted from any payments due or to become due CONTRACTOR.
2. If the Work is not completed and ready for final payment in accordance with Paragraph 14.07, within the period stated in Paragraph 12.01 B.2, CONTRACTOR shall pay to CITY the amount of **five hundred (\$500)** as liquidated damages and not as a penalty for each Calendar Day until the Work is completed and ready for final payment. The amount of liquidated damages shall be deducted from any payments due or to become due CONTRACTOR.

SC-14.02 A. Article 14, Paragraph 14.02, Application for Progress Payments, Subparagraph A is amended by deleting Item 3 and adding the following:

3. CITY shall make payments to CONTRACTOR monthly on or about the 1st day of each month. Payments to CONTRACTOR will be made on the basis of ninety-five percent (95%) of the value of the Work satisfactorily completed plus ninety-five percent (95%) of the value of properly stored and insured, unused materials on hand on the Site of the Work. CITY shall retain five percent (5%) of each partial payment until completion and acceptance of the Work covered by the Contract and final payment is due. All Work covered by a payment becomes CITY's property, provided that the Work paid for remains the sole responsibility of CONTRACTOR until all terms and conditions of the Contract have been met.

SC-14.04. Article 14, Paragraph 14.04, Substantial Completion, Subparagraph A is supplemented as follows:

- A. To be considered substantially complete, the following Facilities must be operational and ready for CITY's continuous use as intended:
 1. Kansas City North Community Center
 2. Tony Aguirre Community Center

3. Brush Creek Community Center
4. Hillcrest Community Center

B. To be considered substantially complete, the work shall be reviewed and approved by the City's ADA Compliance Manager.

SC-14.05 Article 14, Paragraph 14.05, Partial Utilization is amended by adding the following new Subparagraph A.3. immediately following Subparagraph 14.05 A.2:

3. CITY at any time may make a written request to CONTRACTOR to permit CITY to take over operation of any part of the Work although it is not substantially complete. A copy of the request will be sent to DESIGN PROFESSIONAL, and within a reasonable time thereafter CITY, CONTRACTOR and DESIGN PROFESSIONAL shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not make written objection to CITY and DESIGN PROFESSIONAL that such part of the Work is not ready for separate operation by CITY, DESIGN PROFESSIONAL will finalize the list of items to be completed or corrected and will deliver such lists to CITY and CONTRACTOR. DESIGN PROFESSIONAL will also make a written recommendation as to the division of responsibilities pending final payment between CITY and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the Work, which recommendation will become binding upon CITY and CONTRACTOR at the time when CITY takes over such operation (unless they shall have otherwise agreed in writing and so informed DESIGN PROFESSIONAL). During such operation and prior to Substantial Completion of such part of the Work, CITY shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

CITY OF FOUNTAINS
HEART OF THE NATION



KANSAS CITY
MISSOURI

WAGE RATE REQUIREMENTS

Project No.: 07061111

Project Title: Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community Center Facilities

1. Annual Wage Order No. 21
2. **0830.03 Division of Labor Standards Rules & Regulations** are incorporated into and made part of this Contract and are available at <http://www.sos.mo.gov/adrules/csr/current/8csr/8c30-3.pdf>



**DIVISION OF
LABOR
STANDARDS**

3315 West Truman Boulevard, Room 205
P.O. Box 449
Jefferson City, MO 65102-0449
Phone: 573-751-3403
Fax: 573-751-3721
www.labor.mo.gov/DLS
E-mail: laborstandards@labor.mo.gov

JEREMIAH W. (JAY) NIXON
GOVERNOR

RYAN MCKENNA
DEPARTMENT DIRECTOR

JOHN E. LINDSEY
DIVISION DIRECTOR

January 23, 2015

BEFORE THE
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
DIVISION OF LABOR STANDARDS
Jefferson City, Missouri

RECEIVED & FILED

Re: Annual Wage Order No. 21

JAN 23 2015

Annual Incremental Wage Increase to Annual Wage Order No. 21

SECRETARY OF STATE
COMMISSIONS DIVISION

Missouri's Prevailing Wage Law [Section 290.262.9 RSMo (2000)], provides for Annual Incremental Wage increases in **Adair, Andrew, Atchison, Barton, Bates, Benton, Buchanan, Caldwell, Camden, Carroll, Cass, Chariton, Clark, Clay, Clinton, Daviess, DeKalb, Franklin, Gentry, Grundy, Harrison, Henry, Hickory, Holt, Howard, Jackson, Jefferson, Johnson, Knox, Lafayette, Lewis, Linn, Livingston, Macon, Marion, Mercer, Monroe, Montgomery, Morgan, Nodaway, Pettis, Pike, Platte, Putnam, Ralls, Ray, St. Charles, St. Clair, the City of St. Louis City, St. Louis County, Saline, Schuyler, Scotland, Shelby, Sullivan, Vernon and Worth Counties.** The effective date of change is shown in the column labeled "**Effective Date of Increase**" by the craft (Occupational Title). These updated files have been posted to the Division's website referenced by the effective date of AWO 21 – 1/23/15. The new rates should be included in the contract specifications for all future public works projects.

The rest of Annual Wage Order No. 21 remains in full force and effect.

Given at Jefferson City, Missouri January 23, 2015, by direction of the Division of Labor Standards of Missouri.

John E. Lindsey
Division Director

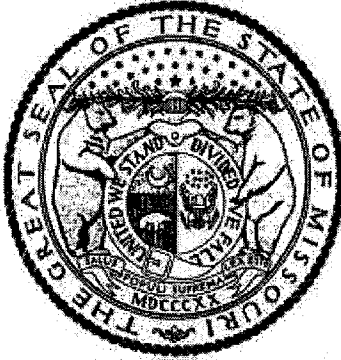
(SEAL)

*Missouri Department of Labor and Industrial Relations is an equal opportunity employer/program.
TDD/TTY: 800-735-2966 Relay Missouri: 711*

**MISSOURI
DEPARTMENT OF LABOR
& INDUSTRIAL RELATIONS**

Missouri Division of Labor Standards

WAGE AND HOUR SECTION



JEREMIAH W. (JAY) NIXON, Governor

Annual Wage Order No. 21

Section 024

CLAY COUNTY

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

Original Signed by

John E. Lindsey, Director
Division of Labor Standards

This Is A True And Accurate Copy Which Was Filed With The Secretary of State: March 10, 2014

Last Date Objections May Be Filed: April 9, 2014

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	** Date of Increase	*	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Asbestos Worker (H & F) Insulator	10/14		\$35.24	52	53	\$24.48
Boilermaker	6/14		\$33.36	57	7	\$27.95
Bricklayer and Stone Mason	6/14		\$33.50	58	39	\$17.75
Carpenter	6/14		\$36.05	63	68	\$15.05
Cement Mason	6/14		\$31.08	65	4	\$17.20
Communication Technician			\$32.79	47	72	\$19.28
Electrician (Inside Wireman)	1/15		\$36.14	13	72	\$16.26 + 10%
Electrician (Outside-Line Construction/Lineman)			\$39.95	125	65	\$5.00 + 34.5%
Lineman Operator			\$37.27	125	65	\$5.00 + 34.5%
Groundman			\$26.47	125	65	\$5.00 + 34.5%
Elevator Constructor	6/14	a	\$42.940	26	54	\$28.335
Glazier			\$30.97	88	32	\$16.63
Ironworker	6/14		\$30.50	50	4	\$27.35
Laborer (Building):						
General	6/14		\$26.40	30	4	\$14.75
First Semi-Skilled	6/14		\$26.80	30	4	\$14.75
Second Semi-Skilled	6/14		\$27.20	30	4	\$14.75
Lather			USE CARPENTER RATE			
Linoleum Layer and Cutter			\$33.82	46	67	\$15.05
Marble Mason	6/14		\$33.76	25	4	\$14.66
Marble Finisher	1/15		\$23.78	25	4	\$9.18
Millwright			USE CARPENTER RATE			
Operating Engineer						
Group I	6/14		\$37.35	85	4	\$15.01
Group II	6/14		\$36.54	85	4	\$15.01
Group III	6/14		\$30.99	85	4	\$15.01
Group III-A	6/14		\$35.20	85	4	\$15.01
Group IV						
Group V	6/14		\$32.59	85	4	\$15.01
Painter	7/14		\$28.13	37	4	\$15.42
Pile Driver			USE CARPENTER RATE			
Pipe Fitter	8/14		\$41.83	2	33	\$19.32
Plasterer	6/14		\$30.75	68	4	\$14.95
Plumber	6/14		\$40.24	45	33	\$20.09
Roofer / Waterproofer	6/14		\$32.25	95	2	\$15.49
Sheet Metal Worker	1/15		\$39.28	17	22	\$19.40
Sprinkler Fitter - Fire Protection			\$34.35	14	4	\$18.77
Terrazzo Worker	6/14		\$33.76	25	4	\$14.66
Terrazzo Finisher	1/15		\$23.78	25	4	\$9.18
Tile Setter	6/14		\$33.76	25	4	\$14.66
Tile Finisher	1/15		\$23.78	25	4	\$9.18
Traffic Control Service Driver			\$15.35	48	49	\$2.71
Truck Driver-Teamster						
Group I			\$30.09	100	4	\$10.90
Group II			\$30.09	100	4	\$10.90
Group III			\$30.29	100	4	\$10.90
Group IV			\$30.29	100	4	\$10.90

Fringe Benefit Percentage is of the Basic Hourly Rate

For additional information regarding the application of the Marble Finisher, Terrazzo Finisher and Tile Finisher see the Labor and Industrial Relations Commission Order of June 10, 2014, in the Matter of Objection Nos. 006-121.

**Annual Incremental Increase

OCCUPATIONAL TITLE	** Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits

* Welders receive rate prescribed for the occupational title performing operation to which welding is incidental.

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

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).

a - Vacation: Employees over 5 years - 8%; Employees under 5 years - 6%

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

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

NO. 2: Means the maximum of eight (8) hours shall constitute a day's work beginning at 8:00 a.m. to 12:00 noon, 12:30 p.m. to 4:30 p.m. The maximum work week shall be forty (40) hours beginning Monday at 8:00 a.m. and ending Friday at 4:30 p.m. Because of traffic, parking or other circumstances, the hours of work on any project may be any continuous 8½ hours period (8 hours of work plus 30 minutes for lunch) between 7:00 a.m. and 4:30 p.m. When circumstances warrant and when it is mutually beneficial and agreed to, the Employer may institute a work week consisting of four (4) consecutive ten (10) hour days, between the hours of 7:00 a.m. and 6:00 p.m. Monday through Thursday, with one-half (½) hour allowed for a lunch period each day. Friday may be used as a make-up day. After ten (10) hours in a workday, or forty (40) hours in a workweek, overtime shall be paid at a rate of one and one-half (1½) times the regular rate of pay. Overtime performed Monday through Saturday shall be paid at the rate of one and one-half (1½) times the regular rate of pay. Sundays and recognized holidays shall be paid at the double (2) time rate of pay. Labor Day shall be paid at triple (3) time. Shift work may be performed at the option of the Contractor. However, whenever shift work is performed it must cover a period not less than (5) consecutive working days. The day shift shall work a regular eight (8) hours shift as outlined above. Employees working a second shift shall receive an additional \$0.25 above the regular hourly rate and perform seven and one-half (7½) hours work for eight (8) hours pay. Third shift employees shall be paid an additional \$0.50 above the regular hourly rate and work seven (7) hours for eight (8) hours pay. In the event a first shift is not required, a second and third shift employee shall receive an additional 15% of the base rate and receive pay for actual hours worked.

NO. 13: Means a regular workday shall consist of eight (8) hours between 8:00 a.m. and 4:30 p.m. Forty (40) hours, within five (5) days -- Monday through Friday inclusive -- shall constitute the regular workweek. The Employer may alter the above stated hours by two (2) hours for an early starting and quitting time only, not to exceed eight (8) hours of work in any one day. When job conditions dictate and as required by the customer, the Employer shall be allowed to establish a four (4) day, ten (10) hour per day work week. This work week is defined as Monday through Thursday, with a Friday make-up day. The normal work day under a ten (10) hour four (4) day work week shall be from 7:00 a.m. to 6:00 p.m., with a one hour starting variance. The make-up day of Friday shall be instituted for specific reasons such as loss of production due to weather and/or holidays. All hours worked in excess of ten (10) hours per day or forty (40) hours per week or hours worked outside the normal work week shall be paid at the applicable overtime rate. The first four (4) hours of overtime after the normal workday, each day Monday through Friday and the first ten (10) hours of overtime on Saturdays shall be paid for at one and one-half (1½) times the regular straight time rate of pay. All other work performed outside of the regularly scheduled working hours and outside of the first ten (10) hours worked on Saturdays shall be paid for at double (2) the regular straight time rate of pay. Sundays and the recognized holidays shall be paid for at double (2) the regular straight time rate of pay, if worked. When so elected by the contractor, multiple shifts of at least five (5) days duration may be worked. When two (2) or three (3) shifts are worked: The first shift (day shift) shall be worked between the hours of 8:00 a.m. and 4:30 p.m. Workmen on the "day shift" shall receive eight (8) hours pay at the regular hourly rate for eight (8) hours work. The second shift (swing shift) shall be worked between the hours of 4:30 p.m. and 12:30 a.m. Workmen on the "swing shift" shall receive eight (8) hours pay at the regular hourly rate plus 10% for seven and one-half (7 ½) hours work. The third shift (graveyard shift) shall be worked between the hours of 12:30 a.m. and 8:00 a.m. Workmen on the "graveyard shift" shall receive eight (8) hours pay at the regular hourly rate plus 15% 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. 14: Means eight (8) hours per day shall constitute a day's work. The regular starting time shall be 8:00 a.m., and the regular quitting time shall be 4:30 p.m.; lunch time shall be twelve (12) o'clock noon to 12:30 p.m. The regular starting time may, by mutual consent of employees on the job site, and the employer, be between 7:00 a.m. and 9:00 a.m. with appropriate adjustments made to the regular quitting time and lunch time. All time worked before the regular starting time and after the regular quitting time, Monday through Friday, shall be paid at the rate of time and one-half (1½). Four (4) days at ten (10) hours a day may be worked at straight time. All work commencing with the beginning of the established work day on Saturday shall be paid at the rate of time and one-half (1½). All work commencing with the beginning of the established work day on Sundays and/or Holidays shall be paid at the rate of double (2) time.

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

NO. 17: Means the regular working day shall consist of eight (8) hours of labor between 7:00 a.m. and 3:30 p.m. and the regular work week shall consist of five (5) consecutive eight (8) hour days of labor beginning on Monday and ending with Friday of each week. 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. Except as otherwise provided, all work performed outside of regular working hours during the regular work week, shall be at double (2) times the regular rate. Working hours may be varied by two (2) hours. When circumstances warrant and when it is mutually beneficial and agreed to by interested parties, the Employer may institute a work week consisting of four (4) consecutive ten (10) hour days, between the hours of five (5) a.m. and six (6) p.m., Monday through Thursday, with one-half (1/2) hour allowed for a lunch period each day. Friday may be used as a make-up day. The make-up day will be voluntary, and a decision not to work may not be held against the employee. When working four (4) ten (10) hour day's overtime will be paid at the time and one-half (1½) rate for the eleventh (11th) and twelfth (12th) hour, all other work will be paid at the double (2) time rate of pay. The first two (2) hours of overtime, Monday through Friday, and the first eight (8) hours on Saturday shall be at time and one-half (1½) for all work. All other overtime shall be at double (2) time. The first two (2) hours of overtime must be concurrent with the regular work day, two (2) hours prior to or following the regular work day are at time and one-half (1½). The regular workday (as previously defined) on Saturday is paid at time and one-half (1½). Work performed outside of the regular Saturday work day is at double (2) time. All work performed on recognized holidays, or days locally observed as such, and Sundays shall be paid at the double (2) time rate of pay.

NO. 25: Means regular working hours of eight (8) hours shall constitute a working day between the hours of 8:00 a.m. to 4:30 p.m. in a forty (40) hour working week of Monday through Friday. Employment on Saturday, Sunday and legal holidays, and employment before or after the regular working hours shall be considered overtime. Employment on Saturday, Sunday and legal holidays shall be paid for at twice (2) the regular hourly rate. 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 (2) the regular hourly rate.

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

NO. 30: Means Monday through Sunday shall constitute the work week. Regular starting time shall be 8:00 A.M., except when the work week is scheduled as a week with starting time advanced or delayed. Starting time may be advanced or delayed by the employer up to two (2) hours from the regular starting time. Eight (8) hours shall constitute the work day. All work performed prior to or after the regular eight (8) hour work day, as described above, and all work performed on Saturday shall be paid at time and one-half (1½) the regular rate. In the event that a scheduled eight (8) hour work day is missed (not to include holidays) because of events out of the control of the contractor, then that missed work day may be made up at straight time the following Saturday. It is recognized that not all employees working on a Saturday make-up day will have worked the same number of hours during the regular work week. It is further recognized that any work after the forty (40) hours in a week must be paid at time and one-half (1½). Saturday make-up day shall not be used to make up for time lost due to recognized holidays. The employer may establish a 4-10's schedule on projects (4 days with 10 hours per day). If using a 4-10's schedule, a Friday make-up day is allowed. If using a 4 (10) schedule, any work more than ten (10) hours in a day or forty (40) hours in a work week shall be paid at the time and one-half (1½) rate. Friday make-up day shall not be used to make up for time lost due to recognized holidays. All work performed on Sundays or holidays shall be paid at the double (2) time rate.

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

NO. 37: The Employer may choose, at his discretion, to work five eight hour days or four ten hour days with a Friday make-up day, Monday through Friday at straight time. Overtime shall be paid after eight (8) hours when working "five eights" and after ten hours when working "four tens". All work performed on Sundays and recognized holidays shall be paid for at the rate of double (2) time. All Saturday work shall be paid for at the rate of time and one-half (1½) the regular wage rate. All night work during the regular work week other than the above-mentioned days shall be paid for at the rate of time and one-half (1½) the regular wage scale until midnight and double (2) time after midnight except make-up time will be allowed under the following condition: In the event of inclement weather on exterior projects which prevents working the full regular eight (8) hour day, forty (40) hour work week schedule, a Saturday make-up day can be granted. Then said work on Saturday shall be paid at the straight time rate of pay up to a maximum total of forty (40) hours per week.

NO. 45: Means eight (8) hours shall constitute a day's work, beginning at 8:00 a.m. and ending at 4:30 p.m. The regular work week shall be forty (40) hours, beginning Monday, 8:00 a.m. and ending at 4:30 p.m. Friday. Because of traffic, parking and other circumstances, the hours of work on any project may begin as early as 6:00 a.m. with eight (8) hours worked between 6:00 a.m. and 4:30 p.m. When circumstances warrant and when it is mutually beneficial and agreed to, the employer may institute a work week consisting of four (4) consecutive ten (10) hour days, between the hours of 7:00 a.m. and 6:00 p.m., Monday through Thursday. Friday may be used as a make-up day. After ten (10) hours in a workday, or forty (40) hours in a workweek, overtime shall be paid at a rate of one and one-half (1½) times the regular rate of pay. All overtime Monday through Saturday shall be paid at the rate of time and one-half (1½) the regular rate of pay. Sunday and recognized holidays shall be paid at double (2) time. Labor Day shall be paid at triple (3) time. Shift work may be performed at the option of the Contractor. However, whenever shift work is performed it must cover a period not less than (5) consecutive working days. The day shift shall work a regular eight (8) hours shift as outlined above. The hourly rate for second shift (seven and one-half hours worked for eight hours paid) shall be twenty-five cents (\$0.25) over and above the hourly rate. The hourly rate for third shift (seven hours worked, eight hours paid) shall be fifty cents (\$0.50) above the hourly rate. If no first shift is worked, second and third shift employees shall receive an additional fifteen percent (15%) over and above the hourly rate for actual hours worked.

NO. 46: Means the regular work day shall be eight (8) hours from 6:00 a.m. to 6:30 p.m. Starting time may be between 6:00 a.m. and 10:00 a.m. The regular work week shall be forty (40) hours, beginning between 6:00 a.m. and 10:00 a.m. on Monday and ending between 2:30 p.m. and 6:30 p.m. on Friday. All hours in excess of the regular work day and work week shall be considered overtime. Overtime on days recognized as regular work days and on Saturday shall be paid for at the rate of time and one-half (1½) the regular rate. Sunday and recognized holidays shall be paid for at the rate of double time (2) for time worked. The Employer may establish a work week consisting of four (4) days, Monday through Thursday, each day consisting of ten (10) hours at straight time rate of pay. The 4-10's must run for a period of at least four (4) days.

NO 47: Means a regular workday shall consist of eight (8) hours between 6:00 a.m. and 6:30 p.m. Forty (40) hours, within five (5) days -- Monday through Friday or Tuesday through Saturday inclusive -- shall constitute the regular workweek. The Employer may alter the above stated hours by two (2) hours for an early starting and quitting time only, not to exceed eight (8) hours of work in any one day. The Employer shall be allowed to establish a four (4) day, ten (10) hour per day work week. This work week is defined as Monday through Thursday, with a Friday make-up day. The normal work day under a ten (10) hour four (4) day work week shall be from 7:00 a.m. to 6:00 p.m. All hours worked in excess of ten (10) hours per day or forty (40) hours per week or hours worked outside the normal work week shall be paid at the applicable overtime rate. The first four (4) hours of overtime after the normal workday, each day Monday through Friday and the first ten (10) hours of overtime on Saturdays shall be paid for at one and one-half (1½) times the regular straight time rate of pay. All other work performed outside of the regularly scheduled working hours and outside of the first ten (10) hours worked on Saturdays shall be paid for at double (2) the regular straight time rate of pay. Sundays and the recognized holidays shall be paid for at double (2) the regular straight time rate of pay, if worked. When so elected by the contractor, multiple shifts of at least five (5) days duration may be worked. When two (2) or three (3) shifts are worked: The first shift (day shift) shall be worked between the hours of 8:00 a.m. and 4:30 p.m. Workmen on the "day shift" shall receive eight (8) hours pay at the regular hourly rate for eight (8) hours work. The second shift (swing shift) shall be worked between the hours of 4:30 p.m. and 12:30 a.m. Workmen on the "swing shift" shall receive eight (8) hours pay at the regular hourly rate plus 10% for seven and one-half (7 ½) hours work. The third shift (graveyard shift) shall be worked between the hours of 12:30 a.m. and 8:00 a.m. Workmen on the "graveyard shift" shall receive eight (8) hours pay at the regular hourly rate plus 15% 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.

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

NO. 48: Means the regularly scheduled work week shall be five (5) consecutive days, Monday through Friday or Tuesday through Saturday. Eight (8) hours shall constitute a day's work. Starting time shall not be earlier than 7:00 a.m. nor later than 10:00 a.m. Forty (40) hours shall constitute a week's work. Overtime at the rate of time and one-half (1½) will be paid for all work in excess of forty (40) hours in any one work week. On the Monday through Friday schedule, all work performed on Saturday will be time and one-half (1½) unless time has been lost during the week, in which case Saturday will be a make up day to the extent of the lost time. On the Tuesday through Saturday schedule, all work performed on Monday will be time and one-half (1½) unless time has been lost during the week, in which case Monday will be a make-up day to the extent of the lost time. Any work performed on Sunday will be double (2) time. If employees work on any of the recognized holidays, they shall be paid time and one-half (1½) their regular rate of pay for all hours worked.

NO. 50: Means eight (8) hours constitute a normal day's work Monday through Friday. Any time worked over eight (8) hours will normally be paid at time and one-half (1½) except for exclusions stated in some following additional sentences. The Employer, at his discretion, may start the work day between 6:00 a.m. and 9:00 a.m. Any schedule chosen shall be started at the beginning of the work week (Monday) and used for at least five days. Work may be scheduled on a four (4) days a week (Monday through Thursday) at ten (10) hours a day schedule. If such a schedule is employed, then Friday may be used as a make-up day when time is lost due to inclement weather. Time and one-half (1½) shall be paid for any work in excess of eight (8) hours in any regular work day Monday through Friday unless working 4-10's, then time and one-half (1½) after ten (10) hours. All work performed on Saturday will be time and one-half (1½). Double (2) time shall be paid for all work on Sundays and recognized holidays.

NO. 52: Means the regular workweek shall consist of five (5) eight (8) hour days, Monday through Friday. The regular workday shall consist of an eight (8) hour period, to be worked between the agreed upon starting time, and ending no later than 4:30 p.m. The agreed upon starting time shall be any time between the hours of 6:00 a.m. and 8:00 a.m. The option exists for the employer to use a four (4) day, ten (10) hour work week. Days worked shall be Monday through Thursday or Tuesday through Friday. If the job requires men on duty all five (5) days, then part of the crew may work the first four (4) days and the remainder of the crew may work the last four (4) days. Hours each day shall be from 7:00 a.m. to 5:30 p.m. Interested parties on the project must agree to this clause before it may be used. Once this clause has been put into effect, it shall remain as long as the majority of the Employees on the project and the Employer agree to keep it. The four (4) day clause shall not be used to circumvent a Holiday. Except as otherwise provided, all work performed outside the regular working hours and performed during the regular work week (Monday through Friday) shall be at the following rates of pay:

Holidays-New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, Christmas Day (or days observed as such) shall be recognized as Holidays that shall be paid at two (2) times the regular rate of pay.

Labor Day-No work shall be performed on Labor Day except in special cases of emergency. Rate of pay shall be at three (3) times the regular rate of pay.

Overtime-Work performed outside of the regular work day (the regular work day shall consist of an eight (8) hour period, to be worked between the agreed upon starting time, and ending not later than 4:30 p.m. The agreed upon starting time shall be any time between the hours of 6:00 a.m. and 8:00 a.m., by mutual consent of the interested party's.), shall be:

- A. Hours worked Monday through Friday, the first two (2) hours of overtime will be paid at time and one-half (1½). All other overtime will be paid at the double (2) time rate.
- B. The first ten (10) hours worked on Saturday will be paid at time and one-half (1½), with all other hours to be paid at the double (2) time rate.
- C. Sundays and Holidays (except Labor Day) shall be paid at the double (2) time rate.

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

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. If a second or third shift is used, the regular starting time of the second shift shall be 4:30 p.m. and the regular starting period for the third shift shall be 12:30 a.m. These times may be adjusted by the employer. The day shift shall work a regular eight (8) hours shift as outlined above. Employees working a second shift shall receive an additional \$0.25 above the regular hourly rate and perform seven and one-half (7½) hours work for eight (8) hours pay. Third shift employees shall be paid an additional \$0.50 above the regular hourly rate and work seven (7) hours for eight (8) hours pay. When circumstances warrant, the Employer may change the regular workweek to four (4) ten-hour days at the regular time rate of pay. All time worked before and after the established workday of eight (8) hours, Monday through Friday, and all time worked on Saturday shall be paid at the rate of time and one-half (1½) except in cases where work is part of an employee's regular Friday shift. All time worked on Sunday and recognized holidays shall be paid at the double (2) time rate of pay except in cases where work is part of an employee's previous day's shift. For all overtime hours worked \$26.71 of the fringe benefits portion of the prevailing wage shall be paid at the same overtime rate at which the cash portion of the prevailing wage is to be paid. The remaining \$1.24 of the fringe benefit portion of the prevailing wage may be paid at straight time.

NO. 58: Means eight (8) consecutive hours, between 6:00 a.m. and 5:30 p.m., shall constitute a day's work. Five (5) days work, Monday through Friday, shall constitute a normal work week. Work performed in excess of eight (8) hours per day or eight hours beyond normal starting time for that project excluding lunch Monday through Friday, and all work performed on Saturday, shall be paid for the rate of time and one-half (1½). When Sundays and recognized holidays are worked, the worker(s) shall be paid at the rate of double (2) time. Work may be scheduled on a four (4) days a week (Monday through Thursday) at ten (10) hours a day schedule at straight time. A Friday make-up day is available if time is lost due to inclement weather and at least sixteen (16) hours, but not more than thirty (30) hours, were worked during the week.

NO. 63: Means eight (8) hours shall constitute the regular work day between time that may be advanced or delayed by two (2) hours on either side of 8:00 AM. The Employer may establish a work week consisting of four (4) days, Monday through Thursday, each day consisting of ten (10) hours straight time. The four (4) tens (10s) must run for a period of at least four (4) days, Monday through Thursday. All work on Friday on a four (4) tens (10) project will be paid at the rate of time and one-half (1½). All work performed on Saturday shall be paid at time and one-half (1½). All work performed on Sundays and recognized holidays must be paid at double (2) time. All work performed prior to or after the regular eight (8) hour work day, or ten (10) hour work day, as described above shall be paid at time and one-half (1½) the regular rate.

NO. 65: Means Monday through Sunday shall constitute the work week. Regular starting time shall be 8:00 a.m., with one half hour for lunch between three and one-half (3½) and five (5) hours after starting time. The starting time may be advanced by two (2) hours or delayed one (1) hour by the employer from the regular starting time. All work performed before the advanced starting time and during the half hour lunch shall be paid at the overtime rate of time and one-half (1½). Work performed outside these hours shall be paid at the overtime rate of time and one-half (1½), except as provided otherwise below. All work performed on Sundays or recognized holidays shall be paid at the double (2) time rate. When the start time is delayed past 9:00 a.m., the employee's pay shall start at 9:00 a.m. and all time, after the normal quitting time (5:30 p.m.), shall be paid at the overtime rate. Eight (8) hours shall constitute the work day. All work performed prior to or after the regular eight (8) hour work day, as described above, and all work performed on Saturday shall be paid at time and one-half (1½) the regular rate. In the event that a scheduled eight (8) hour work day is missed (not including recognized holidays) because of inclement weather, then that missed work day may be made up at straight time on the following Saturday. It is recognized that not all employees working on a Saturday make-up day will have worked the same number of hours during the regular work week. It is further recognized that any work after forty (40) hours must be paid at time and one-half (1½). The employer may establish a 4-10's schedule on projects (4 days with 10 hours per day at straight time). In order to use the 4-10's schedule, the employer must schedule the 4-10's for a minimum of one (1) week. If using a 4-10's schedule, a Friday make-up day is allowed.

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BUILDING CONSTRUCTION OVERTIME SCHEDULE**

NO. 68: Means Monday through Sunday shall constitute the work week. Regular starting time shall be 8:00 a.m., with one half hour for lunch between three and one-half and five hours after starting time. The starting time may be advanced or delayed by the employer up to one hour from the regular starting time. All work performed before the advance starting time and during the half hour lunch shall be paid at the overtime rate of time and one-half (1½). Work performed outside these hours shall be paid at the overtime rate of time and one-half (1½), except as provided otherwise below. All work performed on Sundays or holidays shall be paid at the double (2) time rate. Eight (8) hours shall constitute the work day. All work performed prior to or after the regular eight (8) hour work day, as described above, and all work performed on Saturday shall be paid at time and one-half (1½) the regular rate, except as hereinafter described. In the event that a scheduled eight (8) hour work day is missed (not including recognized holidays) because of inclement weather, then that missed work day may be made up at straight time on the Saturday in the week of the pay period. It is recognized that not all employees working on a Saturday make-up day will have worked the same number of hours during the regular work week. It is further recognized that any work after forty (40) hours must be paid at time and one-half (1½). The employer may establish a 4-10's schedule on projects (4 days with 10 hours per day at straight time). In order to use the 4-10's schedule, the employer must schedule the 4-10's for a minimum of one (1) week. If using a 4-10's schedule, a Friday make-up day is allowed.

NO. 85: Means the work week shall be Monday through Sunday. Eight (8) hours shall constitute a day's work to begin between 6:00 a.m. and 9:00 a.m. and end between 2:30 p.m. to 5:30 p.m. Employees required to work during their lunch period shall receive the overtime rate. Employees shall receive time and one-half (1½) for all time they are required to work prior to their normal starting time or after eight (8) hours or normal quitting time Monday through Friday, or all day on Saturday. If an Employer has started the work week on a five day, eight hours a day schedule, and due to inclement weather misses any time, then he may switch to a nine or ten hours a day schedule, at straight time, for the remainder of that work week in order to make up for the lost time (10-hour make-up day). All work over ten (10) hours a day or over forty (40) hours a week must be paid at time & one-half (1½). Sundays and recognized holidays shall be paid at the double (2) time rate of pay. A contractor may alter the regular work week to four (4) ten (10) hour days at straight time rate of pay. To do this the scheduled 4-10's must be worked at least one full week and the regular workweek shall be Monday through Thursday with Friday being a make-up day at straight time for days missed in the regular workweek due to inclement weather. If 5-8's are being worked, Saturday may be used as a make-up day at straight time if inclement weather prevents work during the normal work week.

NO. 88: Means the regular work week shall consist of five (5) eight (8) hour days, 7:00 a.m. to 3:30 p.m., Monday through Friday, except when the work week is scheduled as a 4-10's week or as a week with start time advanced or delayed as described below. The starting time may be advanced or delayed by one hour on either side of 7:00 a.m. The advanced or delayed starting time must run for a period of at least five (5) days. The Employer may establish a work week consisting of four (4) days, during the regular work week, each day consisting of ten (10) hours at straight time. The 4-10's must run for a period of at least four (4) days. Time and one-half (1½) shall be paid for any work in excess of eight (8) hours in any regular work day Monday through Friday (or ten hours in a 4-10's week), the first eight (8) hours of a Saturday, and it shall be at time and one-half (1½) for the Friday and Saturday following Thanksgiving. Double (2) time shall be paid for the following time worked on Sunday, New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day, as well as any work in excess of eight (8) hours on a Saturday and the Saturday of a three-day weekend (except the Saturday following Thanksgiving).

NO. 95: Means a regular workday shall consist of eight and one-half (8½) hours elapsed time, including one-half hour for lunch. The crew starting times shall be flexible within the period of daylight to 8:00 a.m. Any work performed over ten (10) hours of elapsed time per day including one-half hour for lunch and/or any work performed over forty (40) hours at the straight time rate in one week shall be paid at time and one-half (1½) the straight time rate. Saturday shall be a voluntary make-up day at straight time at the discretion of the contractor and with the consent of the employees. Sunday and recognized holidays shall be paid for at double (2) time.

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BUILDING CONSTRUCTION OVERTIME SCHEDULE**

NO. 100: Means eight (8) hours shall constitute a day's work, and five (5) continuous eight-hour days shall constitute a week's work, Monday through Friday. Time and one-half (1½) the regular hourly rate shall be paid for all work performed in excess of eight (8) hours in any one day or forty (40) hours in any one week. Starting time shall be between 6:00 a.m. and 9:00 a.m. All work over eight (8) hours in a regular 5-day 8-hour schedule shall be at the appropriate overtime rate. All time worked before the regular scheduled starting time shall be paid for at the rate of time and one-half (1½) and shall not apply to regular shift. All time worked after eight (8) hours in any one day or after 5:30 p.m., whichever comes first, shall be paid at the time and one-half (1½) rate. An Employer, at his option, may elect to work four (4) ten (10) hour days, Monday through Thursday, at straight time. All such work must be done at least one week in duration. All work over ten (10) hours in one day or forty (40) hours in a week shall be at the overtime rate. Any employee who is scheduled to work on any regular work day but is prevented from working because of weather conditions, shall be permitted to work on Saturday (Friday if working 4-10's) as a make-up day at the straight time rate of pay. When an employee is required to work on any recognized holiday they shall receive the double (2) time rate for all time that they are required to perform work. All time worked from 12:00 Midnight Saturday to 12:00 Midnight Sunday shall be paid for at the rate of double (2) time on single shift.

NO. 125: Eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. Forty (40) hours within the five (5) days, Monday through Friday inclusive, shall constitute the work week. Starting time may be adjusted not to exceed two (2) hours. Work performed outside of the aforementioned will be paid at the applicable overtime rate. When starting time has been adjusted, all other provisions concerning the work day shall be adjusted accordingly. The overtime rate of pay shall be one and one-half (1½) times the regular rate of wages, other than on Sundays, holidays and from Midnight until 6:00 a.m., which will be paid at double (2) the straight time rate.

**CLAY COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

NO. 2: All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, or the days observed as such, shall be paid at the double time rate of pay.

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

NO. 22: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, or days locally observed as such, and Sunday shall be recognized as holidays. If a holiday falls on Saturday, Friday shall be observed; if it falls on Sunday, Monday shall be observed. All work performed on holidays shall be paid at the double (2) time rate of pay.

NO. 32: All work performed for the Friday and Saturday following Thanksgiving shall be paid at the time and one-half (1½) rate of pay. All work performed on Sundays, New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day shall be paid at the double (2) time rate of pay. When one of the above holidays falls on Sunday, the following Monday shall be observed and when one of the above holidays falls on Saturday, the preceding Friday shall be observed.

NO. 33: All work done on New Year's Day, Memorial Day, Fourth of July, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. Labor Day shall be paid at the triple (3) time rate of pay. If the holiday falls on Sunday, the following Monday will be observed; if the holiday falls on Saturday, the preceding Friday will be observed.

NO. 39: No work shall be done on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas. Any of these holidays falling on Sunday, the following Monday shall be a holiday, and any of these holidays falling on Saturday, the preceding Friday shall be a holiday.

NO. 49: The following days shall be observed as legal holidays: New Year's Day, Decoration Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, Employee's birthday and two (2) personal days. The observance of one (1) of the personal days to be limited to the time between December 1 and March 1 of the following year. If any of these holidays fall on Sunday, the following Monday will be observed as the holiday and if any of these holidays fall on Saturday, the preceding Friday will be observed as the holiday. If employees work on any of these holidays they shall be paid time & one-half (1½) their regular rate of pay for all hours worked.

NO. 53: All work done on New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, Christmas Day or days observed as such for these holidays shall be paid at the double (2) time rate of pay. No work shall be performed on Labor Day except in special cases of emergency, and then the rate of pay shall be at three (3) times the regular rate of pay. When a holiday falls on a Sunday, the following Monday shall be observed as the holiday. When a holiday falls on Saturday, the preceding Friday shall be observed as the holiday.

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

**CLAY COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

NO. 65: Work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. If the holiday falls on Saturday, it will be observed on Friday; if the holiday falls on Sunday, it will be observed on Monday, and shall be paid for at double (2) the regular straight time rate of pay.

NO. 67: All work performed on New Year's Day, Memorial Day, Christmas Day, Fourth of July and Thanksgiving Day, from midnight to midnight, shall be paid for at the rate of double time (2) the basic rate of pay if required to work in addition to any other pay otherwise required hereunder as holiday pay. Positively no work shall be performed on Labor Day. Martin Luther King's Birthday, Veteran's Day, and the day after Thanksgiving Day shall be considered optional holidays, and if the Employer and employees agree that work will be performed on that day, no premium pay will be required. Should any of the above holidays fall on Saturday, the holiday will be observed on Friday. Should any of the above holidays fall on Sunday, the holiday will be observed on Monday.

NO. 68: All work performed on New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Thanksgiving Day, Christmas Day, or days observed as such, shall be paid at the rate of double (2) time. When a holiday falls on a Saturday, Friday shall be observed. When a holiday falls on a Sunday, Monday shall be observed. No work shall be performed on the Fourth of July or Labor Day except to save life or property. Where one of the holidays specified falls or is observed during the work week, then all work performed over and above thirty-two (32) hours in that week shall be paid at the rate of time and one-half (1½).

NO. 72: All work performed on New Year's Day, Memorial Day (last Monday in May), Independence Day, Labor Day, Thanksgiving Day and Christmas Day shall be paid for at double (2) the regular straight time rate of pay. Any one of the above listed holidays falling on Sunday shall be observed on the following Monday and paid for at double (2) the regular straight time rate of pay, if worked. Any one of the above listed holidays falling on Saturday shall be observed on the prior Friday and paid for at double (2) the regular straight time rate of pay, if worked. No work shall be performed on Labor Day except in case of emergency.

OCCUPATIONAL TITLE	* Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Carpenter	6/14	\$36.05	1	17	\$15.05
Cement Mason	6/14	\$30.34	3	2	\$15.23
Electrician (Outside-Line Construction/Lineman)		\$39.95	18	24	\$5.00 + 34.5%
Lineman Operator		\$37.27	18	24	\$5.00 + 34.5%
Lineman - Tree Trimmer		\$20.90	31	30	\$6.01 + 23.5%
Groundman		\$26.47	18	24	\$5.00 + 34.5%
Groundman - Tree Trimmer		\$16.90	31	30	\$6.01 + 23.5%
Laborer					
General Laborer	6/14	\$28.06	3	2	\$14.25
Skilled Laborer	6/14	\$29.27	3	2	\$14.25
Millwright	6/14	\$36.05	1	17	\$15.05
Operating Engineer					
Group I	6/14	\$34.58	3	2	\$15.13
Group II	6/14	\$33.54	3	2	\$15.13
Group III	6/14	\$33.54	3	2	\$15.13
Group IV	6/14	\$29.07	3	2	\$15.13
Oiler-Driver	6/14	\$32.42	3	2	\$15.13
Pile Driver	6/14	\$36.05	1	17	\$15.05
Traffic Control Service Driver		\$15.35	27	26	\$2.71
Truck Driver-Teamster					
Group I		\$29.74	3	2	\$13.30
Group II		\$29.74	3	2	\$13.30
Group III		\$29.74	3	2	\$13.30
Group IV		\$29.74	3	2	\$13.30

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.

**CLAY 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. 1: Means (8) hours shall constitute the regular work day between time that may be advanced or delayed by two (2) hours on either side of 8:00 AM. The Employer may establish a work week consisting of four (4) days, Monday through Thursday, each day consisting of ten (10) hours straight time. The four (4) tens (10s) must run for a period of at least four (4) days, Monday through Thursday. All work on Friday on a four (4) tens (10) project will be paid at the rate of time and one-half (1½). All work performed on Saturday shall be paid at time and one-half (1½). All work performed on Sundays and recognized holidays must be paid at double (2) time. All work performed prior to or after the regular eight (8) hour work day, or ten (10) hour work day, as described above shall be paid at time and one-half (1½) the regular rate.

NO. 3: Means a regular work week shall consist of not more than forty (40) hours of work and all work performed over and above ten (10) hours per day or forty (40) hours per week shall be paid at the rate of time & one-half (1½). Workers shall receive time and one-half (1½) for all work performed on Sundays and recognized holidays. Double (2) time shall be paid for work performed on Sundays or recognized holidays when and only if any other craft employees of the same employer at work on that same job site are receiving double (2) time pay for that Sunday or Holiday work. A work day is to begin between 6:00 a.m. and 9:00 a.m. at the option of the Employer except when inclement weather or other conditions beyond the reasonable control of the Employer prevents work, in which event, the starting time may be delayed, but not later than 12:00 noon. Where one of the recognized holidays falls or is observed during the work week, then all work performed over and above thirty-two (32) hours in that week shall be paid at the rate of time and one-half (1½).

NO. 18: Eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. Forty (40) hours within the five (5) days, Monday through Friday inclusive, shall constitute the work week. Starting time may be adjusted not to exceed two (2) hours. Work performed outside of the aforementioned will be paid at the applicable overtime rate. When starting time has been adjusted, all other provisions concerning the work day shall be adjusted accordingly. The overtime rate of pay shall be one and one-half (1½) times the regular rate of wages, other than on Sundays, holidays and from Midnight until 6:00 a.m., which will be paid at double (2) the straight time rate.

NO. 27: Means the regularly scheduled work week shall be five (5) consecutive days, Monday through Friday or Tuesday through Saturday. Eight (8) hours shall constitute a day's work. Starting time shall not be earlier than 7:00 a.m. nor later than 10:00 a.m. Forty (40) hours shall constitute a week's work. Overtime at the rate of time and one-half (1½) will be paid for all work in excess of forty (40) hours in any one work week. On the Monday through Friday schedule, all work performed on Saturday will be time and one-half (1½) unless time has been lost during the week, in which case Saturday will be a make up day to the extent of the lost time. On the Tuesday through Saturday schedule, all work performed on Monday will be time and one-half (1½) unless time has been lost during the week, in which case Monday will be a make-up day to the extent of the lost time. Any work performed on Sunday will be double (2) time. If employees work on any of the recognized holidays, they shall be paid time and one-half (1½) their regular rate of pay for all hours worked.

NO. 31: Means the overtime rate shall be time and one-half the regular rate for work over forty (40) hours per week. Sundays and Holidays shall be paid at double the straight time rate. All employees performing work on affected properties during or following emergencies shall receive the applicable rate of pay for the first sixteen (16) consecutive hours and all hours worked in excess of sixteen (16) consecutive hours shall be paid at double time until broken by an eight (8) hour rest period. Should an employee be called back to work within two hours of his normal quitting time, the previous hours worked shall count toward the above sixteen (16) hour provision.

**CLAY COUNTY
HOLIDAY SCHEDULE – HEAVY CONSTRUCTION**

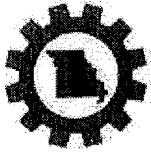
NO. 2: All work performed on New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Thanksgiving Day and Christmas Day, or days observed as such, and Sundays shall be paid at the rate of time and one-half (1½). Double (2) time shall be paid for work on Sundays or recognized holidays when and only if other craft employees of the same employer at work on that same job site are receiving double (2) time pay for that Sunday or holiday work. No work shall be performed on Labor Day, except in case of jeopardy of life or property. This rule is applied to protect Labor Day. When one of the above holidays falls on a Saturday, the preceding Friday shall be observed; when the holiday falls on a Sunday, the following Monday shall be observed. Where one of the specified holidays falls or is observed during the work week, then all work performed over and above thirty-two (32) hours in that week shall be paid at the rate of time and one-half (1½).

NO. 17: All work performed on New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Thanksgiving Day, Christmas Day, or days observed as such, shall be paid at the rate of double (2) time. When a holiday falls on a Saturday, Friday shall be observed. When a holiday falls on a Sunday, Monday shall be observed. No work shall be performed on the Fourth of July or Labor Day except to save life or property. Where one of the holidays specified falls or is observed during the work week, then all work performed over and above thirty-two (32) hours in that week shall be paid at the rate of time and one-half (1½).

NO. 24: Work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. If the holiday falls on Saturday, it will be observed on Friday; if the holiday falls on Sunday, it will be observed on Monday, and shall be paid for at double (2) the regular straight time rate of pay.

NO. 26: The following days shall be observed as legal holidays: New Year's Day, Decoration Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, Employee's birthday and two (2) personal days. The observance of one (1) of the personal days to be limited to the time between December 1 and March 1 of the following year. If any of these holidays fall on Sunday, the following Monday will be observed as the holiday and if any of these holidays fall on Saturday, the preceding Friday will be observed as the holiday. If employees work on any of these holidays they shall be paid time & one-half (1½) their regular rate of pay for all hours worked.

NO. 30: All work performed on New Year's Day, Decoration Day, Fourth of July, Labor Day, Christmas Day, Thanksgiving Day and Day after Thanksgiving or days celebrated for the same.



**DIVISION OF
LABOR
STANDARDS**

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JEREMIAH W. (JAY) NIXON
GOVERNOR

RYAN McKENNA
DEPARTMENT DIRECTOR

JOHN E. LINDSEY
DIVISION DIRECTOR

January 23, 2015

BEFORE THE
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
DIVISION OF LABOR STANDARDS
Jefferson City, Missouri

RECEIVED & FILED

Re: Annual Wage Order No. 21

JAN 23 2015

SECRETARY OF STATE
COMMISSIONS DIVISION

Annual Incremental Wage Increase to Annual Wage Order No. 21

Missouri's Prevailing Wage Law [Section 290.262.9 RSMo (2000)], provides for Annual Incremental Wage increases in **Adair, Andrew, Atchison, Barton, Bates, Benton, Buchanan, Caldwell, Camden, Carroll, Cass, Chariton, Clark, Clay, Clinton, Daviess, DeKalb, Franklin, Gentry, Grundy, Harrison, Henry, Hickory, Holt, Howard, Jackson, Jefferson, Johnson, Knox, Lafayette, Lewis, Linn, Livingston, Macon, Marion, Mercer, Monroe, Montgomery, Morgan, Nodaway, Pettis, Pike, Platte, Putnam, Ralls, Ray, St. Charles, St. Clair, the City of St. Louis City, St. Louis County, Saline, Schuyler, Scotland, Shelby, Sullivan, Vernon and Worth Counties**. The effective date of change is shown in the column labeled "Effective Date of Increase" by the craft (Occupational Title). These updated files have been posted to the Division's website referenced by the effective date of AWO 21 – 1/23/15. The new rates should be included in the contract specifications for all future public works projects.

The rest of Annual Wage Order No. 21 remains in full force and effect.

Given at Jefferson City, Missouri January 23, 2015, by direction of the Division of Labor Standards of Missouri.

John E. Lindsey
Division Director

(SEAL)

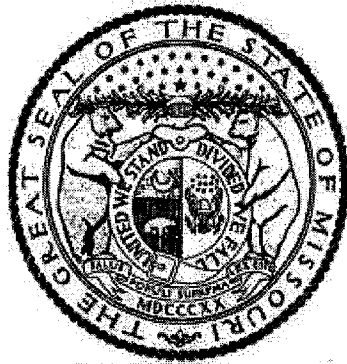
*Missouri Department of Labor and Industrial Relations is an equal opportunity employer/program.
TDD/TTY: 800-735-2966 Relay Missouri: 711*

**MISSOURI
DEPARTMENT OF LABOR
& INDUSTRIAL RELATIONS**

Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



JEREMIAH W. (JAY) NIXON, Governor

Annual Wage Order No. 21

Section 048

JACKSON COUNTY

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

Original Signed by

John E. Lindsey, Director
Division of Labor Standards

This Is A True And Accurate Copy Which Was Filed With The Secretary of State: **March 10, 2014**

Last Date Objections May Be Filed: **April 9, 2014**

Prepared by Missouri Department of Labor and Industrial Relations

OCCUPATIONAL TITLE	** Date of Increase	*	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Asbestos Worker (H & F) Insulator	10/14		\$35.24	52	53	\$24.48
Boilermaker	6/14		\$33.36	57	7	\$27.95
Bricklayer and Stone Mason	6/14		\$33.50	58	39	\$17.75
Carpenter	6/14		\$36.05	63	68	\$15.05
Cement Mason	6/14		\$31.08	65	4	\$17.20
Communication Technician			\$32.79	47	72	\$19.28
Electrician (Inside Wireman)	1/15		\$36.14	13	72	\$16.26 + 10%
Electrician (Outside-Line Construction/Lineman)			\$39.95	125	65	\$5.00 + 34.5%
Lineman Operator			\$37.27	125	65	\$5.00 + 34.5%
Groundman			\$26.46	125	65	\$5.00 + 34.5%
Elevator Constructor	6/14	a	\$42.940	26	54	\$28.335
Glazier			\$30.97	88	32	\$16.63
Ironworker	6/14		\$30.50	50	4	\$27.35
Laborer (Building):						
General	6/14		\$26.40	30	4	\$14.75
First Semi-Skilled	6/14		\$26.80	30	4	\$14.75
Second Semi-Skilled	6/14		\$27.20	30	4	\$14.75
Lather			USE CARPENTER RATE			
Linoleum Layer and Cutter	6/14		\$33.82	46	67	\$15.05
Marble Mason	6/14		\$33.76	25	4	\$14.66
Marble Finisher	1/15		\$23.78	25	4	\$9.18
Millwright			USE CARPENTER RATE			
Operating Engineer						
Group I	6/14		\$37.35	85	4	\$15.01
Group II	6/14		\$36.54	85	4	\$15.01
Group III	6/14		\$30.99	85	4	\$15.01
Group III-A	6/14		\$35.20	85	4	\$15.01
Group IV						
Group V	6/14		\$32.58	85	4	\$15.01
Painter	7/14		\$28.13	37	4	\$15.42
Pipe Fitter	8/14		\$41.83	2	33	\$19.32
Plasterer	6/14		\$30.75	68	4	\$14.95
Plumber	6/14		\$40.24	45	33	\$20.09
Pile Driver			USE CARPENTER RATE			
Roofer \ Waterproofer	6/14		\$32.25	95	2	\$15.49
Sheet Metal Worker	1/15		\$39.28	17	22	\$19.40
Sprinkler Fitter - Fire Protection			\$34.35	14	4	\$18.77
Terrazzo Worker	6/14		\$33.76	25	4	\$14.66
Terrazzo Finisher	1/15		\$23.78	25	4	\$9.18
Tile Setter	6/14		\$33.76	25	4	\$14.66
Tile Finisher	1/15		\$23.78	25	4	\$9.18
Traffic Control Service Driver			\$15.35	48	49	\$2.71
Truck Driver-Teamster						
Group I			\$30.09	100	4	\$10.90
Group II			\$30.09	100	4	\$10.90
Group III			\$30.29	100	4	\$10.90
Group IV			\$30.29	100	4	\$10.90

Fringe Benefit Percentage is of the Basic Hourly Rate

For additional information regarding the application of the Marble Finisher, Terrazzo Finisher and Tile Finisher see the Labor and Industrial Relations Commission Order of June 10, 2014, in the Matter of Objection Nos. 006-121.

**Annual Incremental Increase

OCCUPATIONAL TITLE	** Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits

* Welders receive rate prescribed for the occupational title performing operation to which welding is incidental.

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

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).

a - Vacation: Employees over 5 years - 8%; Employees under 5 years - 6%

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

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

NO. 2: Means the maximum of eight (8) hours shall constitute a day's work beginning at 8:00 a.m. to 12:00 noon, 12:30 p.m. to 4:30 p.m. The maximum work week shall be forty (40) hours beginning Monday at 8:00 a.m. and ending Friday at 4:30 p.m. Because of traffic, parking or other circumstances, the hours of work on any project may be any continuous 8½ hours period (8 hours of work plus 30 minutes for lunch) between 7:00 a.m. and 4:30 p.m. When circumstances warrant and when it is mutually beneficial and agreed to, the Employer may institute a work week consisting of four (4) consecutive ten (10) hour days, between the hours of 7:00 a.m. and 6:00 p.m. Monday through Thursday, with one-half (½) hour allowed for a lunch period each day. Friday may be used as a make-up day. After ten (10) hours in a workday, or forty (40) hours in a workweek, overtime shall be paid at a rate of one and one-half (1½) times the regular rate of pay. Overtime performed Monday through Saturday shall be paid at the rate of one and one-half (1½) times the regular rate of pay. Sundays and recognized holidays shall be paid at the double (2) time rate of pay. Labor Day shall be paid at triple (3) time. Shift work may be performed at the option of the Contractor. However, whenever shift work is performed it must cover a period not less than (5) consecutive working days. The day shift shall work a regular eight (8) hours shift as outlined above. Employees working a second shift shall receive an additional \$0.25 above the regular hourly rate and perform seven and one-half (7½) hours work for eight (8) hours pay. Third shift employees shall be paid an additional \$0.50 above the regular hourly rate and work seven (7) hours for eight (8) hours pay. In the event a first shift is not required, a second and third shift employee shall receive an additional 15% of the base rate and receive pay for actual hours worked.

NO. 13: Means a regular workday shall consist of eight (8) hours between 8:00 a.m. and 4:30 p.m. Forty (40) hours, within five (5) days -- Monday through Friday inclusive -- shall constitute the regular workweek. The Employer may alter the above stated hours by two (2) hours for an early starting and quitting time only, not to exceed eight (8) hours of work in any one day. When job conditions dictate and as required by the customer, the Employer shall be allowed to establish a four (4) day, ten (10) hour per day work week. This work week is defined as Monday through Thursday, with a Friday make-up day. The normal work day under a ten (10) hour four (4) day work week shall be from 7:00 a.m. to 6:00 p.m., with a one hour starting variance. The make-up day of Friday shall be instituted for specific reasons such as loss of production due to weather and/or holidays. All hours worked in excess of ten (10) hours per day or forty (40) hours per week or hours worked outside the normal work week shall be paid at the applicable overtime rate. The first four (4) hours of overtime after the normal workday, each day Monday through Friday and the first ten (10) hours of overtime on Saturdays shall be paid for at one and one-half (1½) times the regular straight time rate of pay. All other work performed outside of the regularly scheduled working hours and outside of the first ten (10) hours worked on Saturdays shall be paid for at double (2) the regular straight time rate of pay. Sundays and the recognized holidays shall be paid for at double (2) the regular straight time rate of pay, if worked. When so elected by the contractor, multiple shifts of at least five (5) days duration may be worked. When two (2) or three (3) shifts are worked: The first shift (day shift) shall be worked between the hours of 8:00 a.m. and 4:30 p.m. Workmen on the "day shift" shall receive eight (8) hours pay at the regular hourly rate for eight (8) hours work. The second shift (swing shift) shall be worked between the hours of 4:30 p.m. and 12:30 a.m. Workmen on the "swing shift" shall receive eight (8) hours pay at the regular hourly rate plus 10% for seven and one-half (7 ½) hours work. The third shift (graveyard shift) shall be worked between the hours of 12:30 a.m. and 8:00 a.m. Workmen on the "graveyard shift" shall receive eight (8) hours pay at the regular hourly rate plus 15% 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. 14: Means eight (8) hours per day shall constitute a day's work. The regular starting time shall be 8:00 a.m., and the regular quitting time shall be 4:30 p.m.; lunch time shall be twelve (12) o'clock noon to 12:30 p.m. The regular starting time may, by mutual consent of employees on the job site, and the employer, be between 7:00 a.m. and 9:00 a.m. with appropriate adjustments made to the regular quitting time and lunch time. All time worked before the regular starting time and after the regular quitting time, Monday through Friday, shall be paid at the rate of time and one-half (1½). Four (4) days at ten (10) hours a day may be worked at straight time. All work commencing with the beginning of the established work day on Saturday shall be paid at the rate of time and one-half (1½). All work commencing with the beginning of the established work day on Sundays and/or Holidays shall be paid at the rate of double (2) time.

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

NO. 17: Means the regular working day shall consist of eight (8) hours of labor between 7:00 a.m. and 3:30 p.m. and the regular work week shall consist of five (5) consecutive eight (8) hour days of labor beginning on Monday and ending with Friday of each week. 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. Except as otherwise provided, all work performed outside of regular working hours during the regular work week, shall be at double (2) times the regular rate. Working hours may be varied by two (2) hours. When circumstances warrant and when it is mutually beneficial and agreed to by interested parties, the Employer may institute a work week consisting of four (4) consecutive ten (10) hour days, between the hours of five (5) a.m. and six (6) p.m., Monday through Thursday, with one-half (1/2) hour allowed for a lunch period each day. Friday may be used as a make-up day. The make-up day will be voluntary, and a decision not to work may not be held against the employee. When working four (4) ten (10) hour day's overtime will be paid at the time and one-half (1½) rate for the eleventh (11th) and twelfth (12th) hour, all other work will be paid at the double (2) time rate of pay. The first two (2) hours of overtime, Monday through Friday, and the first eight (8) hours on Saturday shall be at time and one-half (1½) for all work. All other overtime shall be at double (2) time. The first two (2) hours of overtime must be concurrent with the regular work day, two (2) hours prior to or following the regular work day are at time and one-half (1½). The regular workday (as previously defined) on Saturday is paid at time and one-half (1½). Work performed outside of the regular Saturday work day is at double (2) time. All work performed on recognized holidays, or days locally observed as such, and Sundays shall be paid at the double (2) time rate of pay.

NO. 25: Means regular working hours of eight (8) hours shall constitute a working day between the hours of 8:00 a.m. to 4:30 p.m. in a forty (40) hour working week of Monday through Friday. Employment on Saturday, Sunday and legal holidays, and employment before or after the regular working hours shall be considered overtime. Employment on Saturday, Sunday and legal holidays shall be paid for at twice (2) the regular hourly rate. 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 (2) the regular hourly rate.

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

NO. 30: Means Monday through Sunday shall constitute the work week. Regular starting time shall be 8:00 A.M., except when the work week is scheduled as a week with starting time advanced or delayed. Starting time may be advanced or delayed by the employer up to two (2) hours from the regular starting time. Eight (8) hours shall constitute the work day. All work performed prior to or after the regular eight (8) hour work day, as described above, and all work performed on Saturday shall be paid at time and one-half (1½) the regular rate. In the event that a scheduled eight (8) hour work day is missed (not to include holidays) because of events out of the control of the contractor, then that missed work day may be made up at straight time the following Saturday. It is recognized that not all employees working on a Saturday make-up day will have worked the same number of hours during the regular work week. It is further recognized that any work after the forty (40) hours in a week must be paid at time and one-half (1½). Saturday make-up day shall not be used to make up for time lost due to recognized holidays. The employer may establish a 4-10's schedule on projects (4 days with 10 hours per day). If using a 4-10's schedule, a Friday make-up day is allowed. If using a 4 (10) schedule, any work more than ten (10) hours in a day or forty (40) hours in a work week shall be paid at the time and one-half (1½) rate. Friday make-up day shall not be used to make up for time lost due to recognized holidays. All work performed on Sundays or holidays shall be paid at the double (2) time rate.

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

NO. 37: The Employer may choose, at his discretion, to work five eight hour days or four ten hour days with a Friday make-up day, Monday through Friday at straight time. Overtime shall be paid after eight (8) hours when working "five eights" and after ten hours when working "four tens". All work performed on Sundays and recognized holidays shall be paid for at the rate of double (2) time. All Saturday work shall be paid for at the rate of time and one-half (1½) the regular wage rate. All night work during the regular work week other than the above-mentioned days shall be paid for at the rate of time and one-half (1½) the regular wage scale until midnight and double (2) time after midnight except make-up time will be allowed under the following condition: In the event of inclement weather on exterior projects which prevents working the full regular eight (8) hour day, forty (40) hour work week schedule, a Saturday make-up day can be granted. Then said work on Saturday shall be paid at the straight time rate of pay up to a maximum total of forty (40) hours per week.

NO. 45: Means eight (8) hours shall constitute a day's work, beginning at 8:00 a.m. and ending at 4:30 p.m. The regular work week shall be forty (40) hours, beginning Monday, 8:00 a.m. and ending at 4:30 p.m. Friday. Because of traffic, parking and other circumstances, the hours of work on any project may begin as early as 6:00 a.m. with eight (8) hours worked between 6:00 a.m. and 4:30 p.m. When circumstances warrant and when it is mutually beneficial and agreed to, the employer may institute a work week consisting of four (4) consecutive ten (10) hour days, between the hours of 7:00 a.m. and 6:00 p.m., Monday through Thursday. Friday may be used as a make-up day. After ten (10) hours in a workday, or forty (40) hours in a workweek, overtime shall be paid at a rate of one and one-half (1½) times the regular rate of pay. All overtime Monday through Saturday shall be paid at the rate of time and one-half (1½) the regular rate of pay. Sunday and recognized holidays shall be paid at double (2) time. Labor Day shall be paid at triple (3) time. Shift work may be performed at the option of the Contractor. However, whenever shift work is performed it must cover a period not less than (5) consecutive working days. The day shift shall work a regular eight (8) hours shift as outlined above. The hourly rate for second shift (seven and one-half hours worked for eight hours paid) shall be twenty-five cents (\$0.25) over and above the hourly rate. The hourly rate for third shift (seven hours worked, eight hours paid) shall be fifty cents (\$0.50) above the hourly rate. If no first shift is worked, second and third shift employees shall receive an additional fifteen percent (15%) over and above the hourly rate for actual hours worked.

NO. 46: Means the regular work day shall be eight (8) hours from 6:00 a.m. to 6:30 p.m. Starting time may be between 6:00 a.m. and 10:00 a.m. The regular work week shall be forty (40) hours, beginning between 6:00 a.m. and 10:00 a.m. on Monday and ending between 2:30 p.m. and 6:30 p.m. on Friday. All hours in excess of the regular work day and work week shall be considered overtime. Overtime on days recognized as regular work days and on Saturday shall be paid for at the rate of time and one-half (1½) the regular rate. Sunday and recognized holidays shall be paid for at the rate of double time (2) for time worked. The Employer may establish a work week consisting of four (4) days, Monday through Thursday, each day consisting of ten (10) hours at straight time rate of pay. The 4-10's must run for a period of at least four (4) days.

NO 47: Means a regular workday shall consist of eight (8) hours between 6:00 a.m. and 6:30 p.m. Forty (40) hours, within five (5) days -- Monday through Friday or Tuesday through Saturday inclusive -- shall constitute the regular workweek. The Employer may alter the above stated hours by two (2) hours for an early starting and quitting time only, not to exceed eight (8) hours of work in any one day. The Employer shall be allowed to establish a four (4) day, ten (10) hour per day work week. This work week is defined as Monday through Thursday, with a Friday make-up day. The normal work day under a ten (10) hour four (4) day work week shall be from 7:00 a.m. to 6:00 p.m. All hours worked in excess of ten (10) hours per day or forty (40) hours per week or hours worked outside the normal work week shall be paid at the applicable overtime rate. The first four (4) hours of overtime after the normal workday, each day Monday through Friday and the first ten (10) hours of overtime on Saturdays shall be paid for at one and one-half (1½) times the regular straight time rate of pay. All other work performed outside of the regularly scheduled working hours and outside of the first ten (10) hours worked on Saturdays shall be paid for at double (2) the regular straight time rate of pay. Sundays and the recognized holidays shall be paid for at double (2) the regular straight time rate of pay, if worked. When so elected by the contractor, multiple shifts of at least five (5) days duration may be worked. When two (2) or three (3) shifts are worked: The first shift (day shift) shall be worked between the hours of 8:00 a.m. and 4:30 p.m. Workmen on the "day shift" shall receive eight (8) hours pay at the regular hourly rate for eight (8) hours work. The second shift (swing shift) shall be worked between the hours of 4:30 p.m. and 12:30 a.m. Workmen on the "swing shift" shall receive eight (8) hours pay at the regular hourly rate plus 10% for seven and one-half (7 ½) hours work. The third shift (graveyard shift) shall be worked between the hours of 12:30 a.m. and 8:00 a.m. Workmen on the "graveyard shift" shall receive eight (8) hours pay at the regular hourly rate plus 15% 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.

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

NO. 48: Means the regularly scheduled work week shall be five (5) consecutive days, Monday through Friday or Tuesday through Saturday. Eight (8) hours shall constitute a day's work. Starting time shall not be earlier than 7:00 a.m. nor later than 10:00 a.m. Forty (40) hours shall constitute a week's work. Overtime at the rate of time and one-half (1½) will be paid for all work in excess of forty (40) hours in any one work week. On the Monday through Friday schedule, all work performed on Saturday will be time and one-half (1½) unless time has been lost during the week, in which case Saturday will be a make up day to the extent of the lost time. On the Tuesday through Saturday schedule, all work performed on Monday will be time and one-half (1½) unless time has been lost during the week, in which case Monday will be a make-up day to the extent of the lost time. Any work performed on Sunday will be double (2) time. If employees work on any of the recognized holidays, they shall be paid time and one-half (1½) their regular rate of pay for all hours worked.

NO. 50: Means eight (8) hours constitute a normal day's work Monday through Friday. Any time worked over eight (8) hours will normally be paid at time and one-half (1½) except for exclusions stated in some following additional sentences. The Employer, at his discretion, may start the work day between 6:00 a.m. and 9:00 a.m. Any schedule chosen shall be started at the beginning of the work week (Monday) and used for at least five days. Work may be scheduled on a four (4) days a week (Monday through Thursday) at ten (10) hours a day schedule. If such a schedule is employed, then Friday may be used as a make-up day when time is lost due to inclement weather. Time and one-half (1½) shall be paid for any work in excess of eight (8) hours in any regular work day Monday through Friday unless working 4-10's, then time and one-half (1½) after ten (10) hours. All work performed on Saturday will be time and one-half (1½). Double (2) time shall be paid for all work on Sundays and recognized holidays.

NO. 52: Means the regular workweek shall consist of five (5) eight (8) hour days, Monday through Friday. The regular workday shall consist of an eight (8) hour period, to be worked between the agreed upon starting time, and ending no later than 4:30 p.m. The agreed upon starting time shall be any time between the hours of 6:00 a.m. and 8:00 a.m. The option exists for the employer to use a four (4) day, ten (10) hour work week. Days worked shall be Monday through Thursday or Tuesday through Friday. If the job requires men on duty all five (5) days, then part of the crew may work the first four (4) days and the remainder of the crew may work the last four (4) days. Hours each day shall be from 7:00 a.m. to 5:30 p.m. Interested parties on the project must agree to this clause before it may be used. Once this clause has been put into effect, it shall remain as long as the majority of the Employees on the project and the Employer agree to keep it. The four (4) day clause shall not be used to circumvent a Holiday. Except as otherwise provided, all work performed outside the regular working hours and performed during the regular work week (Monday through Friday) shall be at the following rates of pay:

Holidays-New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, Christmas Day (or days observed as such) shall be recognized as Holidays that shall be paid at two (2) times the regular rate of pay.

Labor Day-No work shall be performed on Labor Day except in special cases of emergency. Rate of pay shall be at three (3) times the regular rate of pay.

Overtime-Work performed outside of the regular work day (the regular work day shall consist of an eight (8) hour period, to be worked between the agreed upon starting time, and ending not later than 4:30 p.m. The agreed upon starting time shall be any time between the hours of 6:00 a.m. and 8:00 a.m., by mutual consent of the interested party's.), shall be:

- A. Hours worked Monday through Friday, the first two (2) hours of overtime will be paid at time and one-half (1½). All other overtime will be paid at the double (2) time rate.
- B. The first ten (10) hours worked on Saturday will be paid at time and one-half (1½), with all other hours to be paid at the double (2) time rate.
- C. Sundays and Holidays (except Labor Day) shall be paid at the double (2) time rate.

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

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. If a second or third shift is used, the regular starting time of the second shift shall be 4:30 p.m. and the regular starting period for the third shift shall be 12:30 a.m. These times may be adjusted by the employer. The day shift shall work a regular eight (8) hours shift as outlined above. Employees working a second shift shall receive an additional \$0.25 above the regular hourly rate and perform seven and one-half (7½) hours work for eight (8) hours pay. Third shift employees shall be paid an additional \$0.50 above the regular hourly rate and work seven (7) hours for eight (8) hours pay. When circumstances warrant, the Employer may change the regular workweek to four (4) ten-hour days at the regular time rate of pay. All time worked before and after the established workday of eight (8) hours, Monday through Friday, and all time worked on Saturday shall be paid at the rate of time and one-half (1½) except in cases where work is part of an employee's regular Friday shift. All time worked on Sunday and recognized holidays shall be paid at the double (2) time rate of pay except in cases where work is part of an employee's previous day's shift. For all overtime hours worked \$26.71 of the fringe benefits portion of the prevailing wage shall be paid at the same overtime rate at which the cash portion of the prevailing wage is to be paid. The remaining \$1.24 of the fringe benefit portion of the prevailing wage may be paid at straight time.

NO. 58: Means eight (8) consecutive hours, between 6:00 a.m. and 5:30 p.m., shall constitute a day's work. Five (5) days work, Monday through Friday, shall constitute a normal work week. Work performed in excess of eight (8) hours per day or eight hours beyond normal starting time for that project excluding lunch Monday through Friday, and all work performed on Saturday, shall be paid for the rate of time and one-half (1½). When Sundays and recognized holidays are worked, the worker(s) shall be paid at the rate of double (2) time. Work may be scheduled on a four (4) days a week (Monday through Thursday) at ten (10) hours a day schedule at straight time. A Friday make-up day is available if time is lost due to inclement weather and at least sixteen (16) hours, but not more than thirty (30) hours, were worked during the week.

NO. 63: Means eight (8) hours shall constitute the regular work day between time that may be advanced or delayed by two (2) hours on either side of 8:00 AM. The Employer may establish a work week consisting of four (4) days, Monday through Thursday, each day consisting of ten (10) hours straight time. The four (4) tens (10s) must run for a period of at least four (4) days, Monday through Thursday. All work on Friday on a four (4) tens (10) project will be paid at the rate of time and one-half (1½). All work performed on Saturday shall be paid at time and one-half (1½). All work performed on Sundays and recognized holidays must be paid at double (2) time. All work performed prior to or after the regular eight (8) hour work day, or ten (10) hour work day, as described above shall be paid at time and one-half (1½) the regular rate.

NO. 65: Means Monday through Sunday shall constitute the work week. Regular starting time shall be 8:00 a.m., with one half hour for lunch between three and one-half (3½) and five (5) hours after starting time. The starting time may be advanced by two (2) hours or delayed one (1) hour by the employer from the regular starting time. All work performed before the advanced starting time and during the half hour lunch shall be paid at the overtime rate of time and one-half (1½). Work performed outside these hours shall be paid at the overtime rate of time and one-half (1½), except as provided otherwise below. All work performed on Sundays or recognized holidays shall be paid at the double (2) time rate. When the start time is delayed past 9:00 a.m., the employee's pay shall start at 9:00 a.m. and all time, after the normal quitting time (5:30 p.m.), shall be paid at the overtime rate. Eight (8) hours shall constitute the work day. All work performed prior to or after the regular eight (8) hour work day, as described above, and all work performed on Saturday shall be paid at time and one-half (1½) the regular rate. In the event that a scheduled eight (8) hour work day is missed (not including recognized holidays) because of inclement weather, then that missed work day may be made up at straight time on the following Saturday. It is recognized that not all employees working on a Saturday make-up day will have worked the same number of hours during the regular work week. It is further recognized that any work after forty (40) hours must be paid at time and one-half (1½). The employer may establish a 4-10's schedule on projects (4 days with 10 hours per day at straight time). In order to use the 4-10's schedule, the employer must schedule the 4-10's for a minimum of one (1) week. If using a 4-10's schedule, a Friday make-up day is allowed.

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

NO. 68: Means Monday through Sunday shall constitute the work week. Regular starting time shall be 8:00 a.m., with one half hour for lunch between three and one-half and five hours after starting time. The starting time may be advanced or delayed by the employer up to one hour from the regular starting time. All work performed before the advance starting time and during the half hour lunch shall be paid at the overtime rate of time and one-half (1½). Work performed outside these hours shall be paid at the overtime rate of time and one-half (1½), except as provided otherwise below. All work performed on Sundays or holidays shall be paid at the double (2) time rate. Eight (8) hours shall constitute the work day. All work performed prior to or after the regular eight (8) hour work day, as described above, and all work performed on Saturday shall be paid at time and one-half (1½) the regular rate, except as hereinafter described. In the event that a scheduled eight (8) hour work day is missed (not including recognized holidays) because of inclement weather, then that missed work day may be made up at straight time on the Saturday in the week of the pay period. It is recognized that not all employees working on a Saturday make-up day will have worked the same number of hours during the regular work week. It is further recognized that any work after forty (40) hours must be paid at time and one-half (1½). The employer may establish a 4-10's schedule on projects (4 days with 10 hours per day at straight time). In order to use the 4-10's schedule, the employer must schedule the 4-10's for a minimum of one (1) week. If using a 4-10's schedule, a Friday make-up day is allowed.

NO. 85: Means the work week shall be Monday through Sunday. Eight (8) hours shall constitute a day's work to begin between 6:00 a.m. and 9:00 a.m. and end between 2:30 p.m. to 5:30 p.m. Employees required to work during their lunch period shall receive the overtime rate. Employees shall receive time and one-half (1½) for all time they are required to work prior to their normal starting time or after eight (8) hours or normal quitting time Monday through Friday, or all day on Saturday. If an Employer has started the work week on a five day, eight hours a day schedule, and due to inclement weather misses any time, then he may switch to a nine or ten hours a day schedule, at straight time, for the remainder of that work week in order to make up for the lost time (10-hour make-up day). All work over ten (10) hours a day or over forty (40) hours a week must be paid at time & one-half (1½). Sundays and recognized holidays shall be paid at the double (2) time rate of pay. A contractor may alter the regular work week to four (4) ten (10) hour days at straight time rate of pay. To do this the scheduled 4-10's must be worked at least one full week and the regular workweek shall be Monday through Thursday with Friday being a make-up day at straight time for days missed in the regular workweek due to inclement weather. If 5-8's are being worked, Saturday may be used as a make-up day at straight time if inclement weather prevents work during the normal work week.

NO. 88: Means the regular work week shall consist of five (5) eight (8) hour days, 7:00 a.m. to 3:30 p.m., Monday through Friday, except when the work week is scheduled as a 4-10's week or as a week with start time advanced or delayed as described below. The starting time may be advanced or delayed by one hour on either side of 7:00 a.m. The advanced or delayed starting time must run for a period of at least five (5) days. The Employer may establish a work week consisting of four (4) days, during the regular work week, each day consisting of ten (10) hours at straight time. The 4-10's must run for a period of at least four (4) days. Time and one-half (1½) shall be paid for any work in excess of eight (8) hours in any regular work day Monday through Friday (or ten hours in a 4-10's week), the first eight (8) hours of a Saturday, and it shall be at time and one-half (1½) for the Friday and Saturday following Thanksgiving. Double (2) time shall be paid for the following time worked on Sunday, New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day, as well as any work in excess of eight (8) hours on a Saturday and the Saturday of a three-day weekend (except the Saturday following Thanksgiving).

NO. 95: Means a regular workday shall consist of eight and one-half (8½) hours elapsed time, including one-half hour for lunch. The crew starting times shall be flexible within the period of daylight to 8:00 a.m. Any work performed over ten (10) hours of elapsed time per day including one-half hour for lunch and/or any work performed over forty (40) hours at the straight time rate in one week shall be paid at time and one-half (1½) the straight time rate. Saturday shall be a voluntary make-up day at straight time at the discretion of the contractor and with the consent of the employees. Sunday and recognized holidays shall be paid for at double (2) time.

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

NO. 100: Means eight (8) hours shall constitute a day's work, and five (5) continuous eight-hour days shall constitute a week's work, Monday through Friday. Time and one-half (1½) the regular hourly rate shall be paid for all work performed in excess of eight (8) hours in any one day or forty (40) hours in any one week. Starting time shall be between 6:00 a.m. and 9:00 a.m. All work over eight (8) hours in a regular 5-day 8-hour schedule shall be at the appropriate overtime rate. All time worked before the regular scheduled starting time shall be paid for at the rate of time and one-half (1½) and shall not apply to regular shift. All time worked after eight (8) hours in any one day or after 5:30 p.m., whichever comes first, shall be paid at the time and one-half (1½) rate. An Employer, at his option, may elect to work four (4) ten (10) hour days, Monday through Thursday, at straight time. All such work must be done at least one week in duration. All work over ten (10) hours in one day or forty (40) hours in a week shall be at the overtime rate. Any employee who is scheduled to work on any regular work day but is prevented from working because of weather conditions, shall be permitted to work on Saturday (Friday if working 4-10's) as a make-up day at the straight time rate of pay. When an employee is required to work on any recognized holiday they shall receive the double (2) time rate for all time that they are required to perform work. All time worked from 12:00 Midnight Saturday to 12:00 Midnight Sunday shall be paid for at the rate of double (2) time on single shift.

NO. 125: Eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. Forty (40) hours within the five (5) days, Monday through Friday inclusive, shall constitute the work week. Starting time may be adjusted not to exceed two (2) hours. Work performed outside of the aforementioned will be paid at the applicable overtime rate. When starting time has been adjusted, all other provisions concerning the work day shall be adjusted accordingly. The overtime rate of pay shall be one and one-half (1½) times the regular rate of wages, other than on Sundays, holidays and from Midnight until 6:00 a.m., which will be paid at double (2) the straight time rate.

**JACKSON COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

NO. 2: All work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, or the days observed as such, shall be paid at the double time rate of pay.

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

NO. 22: All work performed on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, or days locally observed as such, and Sunday shall be recognized as holidays. If a holiday falls on Saturday, Friday shall be observed; if it falls on Sunday, Monday shall be observed. All work performed on holidays shall be paid at the double (2) time rate of pay.

NO. 32: All work performed for the Friday and Saturday following Thanksgiving shall be paid at the time and one-half (1½) rate of pay. All work performed on Sundays, New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day shall be paid at the double (2) time rate of pay. When one of the above holidays falls on Sunday, the following Monday shall be observed and when one of the above holidays falls on Saturday, the preceding Friday shall be observed.

NO. 33: All work done on New Year's Day, Memorial Day, Fourth of July, Thanksgiving Day and Christmas Day shall be paid at the double time rate of pay. Labor Day shall be paid at the triple (3) time rate of pay. If the holiday falls on Sunday, the following Monday will be observed; if the holiday falls on Saturday, the preceding Friday will be observed.

NO. 39: No work shall be done on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas. Any of these holidays falling on Sunday, the following Monday shall be a holiday, and any of these holidays falling on Saturday, the preceding Friday shall be a holiday.

NO. 49: The following days shall be observed as legal holidays: New Year's Day, Decoration Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, Employee's birthday and two (2) personal days. The observance of one (1) of the personal days to be limited to the time between December 1 and March 1 of the following year. If any of these holidays fall on Sunday, the following Monday will be observed as the holiday and if any of these holidays fall on Saturday, the preceding Friday will be observed as the holiday. If employees work on any of these holidays they shall be paid time & one-half (1½) their regular rate of pay for all hours worked.

NO. 53: All work done on New Year's Day, Memorial Day, Independence Day, Thanksgiving Day, Christmas Day or days observed as such for these holidays shall be paid at the double (2) time rate of pay. No work shall be performed on Labor Day except in special cases of emergency, and then the rate of pay shall be at three (3) times the regular rate of pay. When a holiday falls on a Sunday, the following Monday shall be observed as the holiday. When a holiday falls on Saturday, the preceding Friday shall be observed as the holiday.

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

**JACKSON COUNTY
HOLIDAY SCHEDULE – BUILDING CONSTRUCTION**

NO. 65: Work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. If the holiday falls on Saturday, it will be observed on Friday; if the holiday falls on Sunday, it will be observed on Monday, and shall be paid for at double (2) the regular straight time rate of pay.

NO. 67: All work performed on New Year's Day, Memorial Day, Christmas Day, Fourth of July and Thanksgiving Day, from midnight to midnight, shall be paid for at the rate of double time (2) the basic rate of pay if required to work in addition to any other pay otherwise required hereunder as holiday pay. Positively no work shall be performed on Labor Day. Martin Luther King's Birthday, Veteran's Day, and the day after Thanksgiving Day shall be considered optional holidays, and if the Employer and employees agree that work will be performed on that day, no premium pay will be required. Should any of the above holidays fall on Saturday, the holiday will be observed on Friday. Should any of the above holidays fall on Sunday, the holiday will be observed on Monday.

NO. 68: All work performed on New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Thanksgiving Day, Christmas Day, or days observed as such, shall be paid at the rate of double (2) time. When a holiday falls on a Saturday, Friday shall be observed. When a holiday falls on a Sunday, Monday shall be observed. No work shall be performed on the Fourth of July or Labor Day except to save life or property. Where one of the holidays specified falls or is observed during the work week, then all work performed over and above thirty-two (32) hours in that week shall be paid at the rate of time and one-half (1½).

NO. 72: All work performed on New Year's Day, Memorial Day (last Monday in May), Independence Day, Labor Day, Thanksgiving Day and Christmas Day shall be paid for at double (2) the regular straight time rate of pay. Any one of the above listed holidays falling on Sunday shall be observed on the following Monday and paid for at double (2) the regular straight time rate of pay, if worked. Any one of the above listed holidays falling on Saturday shall be observed on the prior Friday and paid for at double (2) the regular straight time rate of pay, if worked. No work shall be performed on Labor Day except in case of emergency.

OCCUPATIONAL TITLE	* Date of Increase	Basic Hourly Rates	Over-Time Schedule	Holiday Schedule	Total Fringe Benefits
Carpenter	6/14	\$36.05	1	17	\$15.05
Cement Mason	6/14	\$30.34	3	2	\$15.23
Electrician (Outside-Line Construction/Lineman)		\$39.95	18	24	\$5.00 + 34.5%
Lineman Operator		\$37.27	18	24	\$5.00 + 34.5%
Lineman - Tree Trimmer		\$20.90	31	30	\$6.01 + 23.5%
Groundman		\$26.47	18	24	\$5.00 + 34.5%
Groundman - Tree Trimmer		\$16.90	31	30	\$6.01 + 23.5%
Laborer					
General Laborer	6/14	\$28.06	3	2	\$14.25
Skilled Laborer	6/14	\$29.27	3	2	\$14.25
Millwright	6/14	\$36.05	1	17	\$15.05
Operating Engineer					
Group I	6/14	\$34.58	3	2	\$15.13
Group II	6/14	\$33.54	3	2	\$15.13
Group III	6/14	\$33.54	3	2	\$15.13
Group IV	6/14	\$29.07	3	2	\$15.13
Oilier-Driver	6/14	\$32.42	3	2	\$15.13
Pile Driver	6/14	\$36.05	1	17	\$15.05
Traffic Control Service Driver		\$15.35	27	26	\$2.71
Truck Driver-Teamster					
Group I		\$29.74	3	2	\$13.30
Group II		\$29.74	3	2	\$13.30
Group III		\$29.74	3	2	\$13.30
Group IV		\$29.74	3	2	\$13.30

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.

**JACKSON 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. 1: Means (8) hours shall constitute the regular work day between time that may be advanced or delayed by two (2) hours on either side of 8:00 AM. The Employer may establish a work week consisting of four (4) days, Monday through Thursday, each day consisting of ten (10) hours straight time. The four (4) tens (10s) must run for a period of at least four (4) days, Monday through Thursday. All work on Friday on a four (4) tens (10) project will be paid at the rate of time and one-half (1½). All work performed on Saturday shall be paid at time and one-half (1½). All work performed on Sundays and recognized holidays must be paid at double (2) time. All work performed prior to or after the regular eight (8) hour work day, or ten (10) hour work day, as described above shall be paid at time and one-half (1½) the regular rate.

NO. 3: Means a regular work week shall consist of not more than forty (40) hours of work and all work performed over and above ten (10) hours per day or forty (40) hours per week shall be paid at the rate of time & one-half (1½). Workers shall receive time and one-half (1½) for all work performed on Sundays and recognized holidays. Double (2) time shall be paid for work performed on Sundays or recognized holidays when and only if any other craft employees of the same employer at work on that same job site are receiving double (2) time pay for that Sunday or Holiday work. A work day is to begin between 6:00 a.m. and 9:00 a.m. at the option of the Employer except when inclement weather or other conditions beyond the reasonable control of the Employer prevents work, in which event, the starting time may be delayed, but not later than 12:00 noon. Where one of the recognized holidays falls or is observed during the work week, then all work performed over and above thirty-two (32) hours in that week shall be paid at the rate of time and one-half (1½).

NO. 18: Eight (8) hours of work between the hours of 8:00 a.m. and 4:30 p.m. shall constitute a work day. Forty (40) hours within the five (5) days, Monday through Friday inclusive, shall constitute the work week. Starting time may be adjusted not to exceed two (2) hours. Work performed outside of the aforementioned will be paid at the applicable overtime rate. When starting time has been adjusted, all other provisions concerning the work day shall be adjusted accordingly. The overtime rate of pay shall be one and one-half (1½) times the regular rate of wages, other than on Sundays, holidays and from Midnight until 6:00 a.m., which will be paid at double (2) the straight time rate.

NO. 27: Means the regularly scheduled work week shall be five (5) consecutive days, Monday through Friday or Tuesday through Saturday. Eight (8) hours shall constitute a day's work. Starting time shall not be earlier than 7:00 a.m. nor later than 10:00 a.m. Forty (40) hours shall constitute a week's work. Overtime at the rate of time and one-half (1½) will be paid for all work in excess of forty (40) hours in any one work week. On the Monday through Friday schedule, all work performed on Saturday will be time and one-half (1½) unless time has been lost during the week, in which case Saturday will be a make up day to the extent of the lost time. On the Tuesday through Saturday schedule, all work performed on Monday will be time and one-half (1½) unless time has been lost during the week, in which case Monday will be a make-up day to the extent of the lost time. Any work performed on Sunday will be double (2) time. If employees work on any of the recognized holidays, they shall be paid time and one-half (1½) their regular rate of pay for all hours worked.

NO. 31: Means the overtime rate shall be time and one-half the regular rate for work over forty (40) hours per week. Sundays and Holidays shall be paid at double the straight time rate. All employees performing work on affected properties during or following emergencies shall receive the applicable rate of pay for the first sixteen (16) consecutive hours and all hours worked in excess of sixteen (16) consecutive hours shall be paid at double time until broken by an eight (8) hour rest period. Should an employee be called back to work within two hours of his normal quitting time, the previous hours worked shall count toward the above sixteen (16) hour provision.

**JACKSON COUNTY
HOLIDAY SCHEDULE – HEAVY CONSTRUCTION**

NO. 2: All work performed on New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Thanksgiving Day and Christmas Day, or days observed as such, and Sundays shall be paid at the rate of time and one-half (1½). Double (2) time shall be paid for work on Sundays or recognized holidays when and only if other craft employees of the same employer at work on that same job site are receiving double (2) time pay for that Sunday or holiday work. No work shall be performed on Labor Day, except in case of jeopardy of life or property. This rule is applied to protect Labor Day. When one of the above holidays falls on a Saturday, the preceding Friday shall be observed; when the holiday falls on a Sunday, the following Monday shall be observed. Where one of the specified holidays falls or is observed during the work week, then all work performed over and above thirty-two (32) hours in that week shall be paid at the rate of time and one-half (1½).

NO. 17: All work performed on New Year's Day, Decoration Day (Memorial Day), Independence Day (Fourth of July), Labor Day, Thanksgiving Day, Christmas Day, or days observed as such, shall be paid at the rate of double (2) time. When a holiday falls on a Saturday, Friday shall be observed. When a holiday falls on a Sunday, Monday shall be observed. No work shall be performed on the Fourth of July or Labor Day except to save life or property. Where one of the holidays specified falls or is observed during the work week, then all work performed over and above thirty-two (32) hours in that week shall be paid at the rate of time and one-half (1½).

NO. 24: Work performed on New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, or days celebrated as such, shall be paid at the double time rate of pay. If the holiday falls on Saturday, it will be observed on Friday; if the holiday falls on Sunday, it will be observed on Monday, and shall be paid for at double (2) the regular straight time rate of pay.

NO. 26: The following days shall be observed as legal holidays: New Year's Day, Decoration Day, July 4th, Labor Day, Thanksgiving Day, Christmas Day, Employee's birthday and two (2) personal days. The observance of one (1) of the personal days to be limited to the time between December 1 and March 1 of the following year. If any of these holidays fall on Sunday, the following Monday will be observed as the holiday and if any of these holidays fall on Saturday, the preceding Friday will be observed as the holiday. If employees work on any of these holidays they shall be paid time & one-half (1½) their regular rate of pay for all hours worked.

NO. 30: All work performed on New Year's Day, Decoration Day, Fourth of July, Labor Day, Christmas Day, Thanksgiving Day and Day after Thanksgiving or days celebrated for the same.



ADDENDUM NUMBER 2

Project Number 07061111

Project Title Bid Package No. 06 - ADA Compliance Project for Parks Department - Community Centers

County: Clay and Jackson

ISSUE DATE: May 11, 2015

Bidders are hereby notified that the Bidding and Contract Documents for the above project, for which Bids are to be received on Tuesday, May 19, 2015, are amended as follows:

Information to Bidders The following is provided to Bidders for information only:

1. Attached is the Attendee List for the Site Tour.

Contracting Requirements:

1. Insert Section 00411 "Itemized Prices" and update the Table of Contents accordingly, to provide a breakdown of the costs associated with each facility in this Bid Package in numeric figures. This does not revise the Bid Form – Document 00410, and is being requested for the City's accounting purposes only. The total value of all line items in Section 00411 "Itemized Prices" should equal the total Base Bid, exclusive of Allowance No. 1 for signage.

Drawings:

A. Tony Aguirre Community Center

1. Delete detail "A" on Sheet A-6C-006.
2. Refer to Sheets A-6C-005, P-6C-002, and E-6C-002:
 - a. Disconnect two existing electrical outlets at the center island in Kitchen 212, and reinstall and connect outlets in new casework per plan.
 - b. Remove existing stove in Kitchen 212 and return to owner. Provide and install new ADA compliant stove in Kitchen 212 in the same location per specifications.
 - c. Remove existing dishwasher in Kitchen 212 and return to owner. Provide and install new ADA compliant under-counter dishwasher in same location at new casework per specification to fit below 34" high countertop.
 - d. Remove existing under-counter refrigerator in Kitchen 212 and return to owner. Provide and install new ADA complaint under-counter refrigerator per specification to fit below 34" high countertop.

NOTE: Bidders must acknowledge receipt of this Addendum by listing the number and date, where provided, on the Bid Form - Document 00410.



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
KC NORTH COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the KC North Community Center
 Location: 3930 NE Antioch Road, Kansas City, MO 64117
 Date: May 6, 2015 Time: 10:15 AM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Vazquez Commercial Contractors	Sam Borton <i>[Signature]</i>	✓	816 398-0145		Sambe VAZQUEZ@CC -COM
The Wilson Group	Jesse Hopkins <i>[Signature]</i>	✓	816 434-3189	816 537 0118	j.hopkins@ the-wilson-group-inc.com
INFINITE ENERGY CONSTRUCTION	MARK Mearby <i>[Signature]</i>	Yes	816-763 7471		MARK@ IEC8A.COM
Infinite Energy Construction	Tim Albertson <i>[Signature]</i>	Yes	816-263 7471		Tim@ iec8a.com
Dev Inc	Dev Anant <i>[Signature]</i>	Yes	913-222-8882 " "	913-302-8880	shamur@ dev-inc.com
	Shannon Thomas	Yes			



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
KC NORTH COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the KC North Community Center
 Location: 3930 NE Antioch Road, Kansas City, MO 64117
 Date: May 6, 2015 Time: 10:15 AM

Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
[Redacted Signature]				sonya@tenech.com sonya@tenech.com
Jonna Jones	Y	913-671-7706	913-671-7307	sonya@tenech.com
Donna Fester	N	816-419-3507	N/A	dfoster@summitflooringandturf.com
Alexandra [Redacted]				alexandra@dayco.com alexandra@dayco.com
Steve Miller	No	916-769-3422		Steve.M@daycopainting.com
Brent L. Motley	Yes	913-832-4393		bmotley@bkmconstructionllc.com
Mark [Redacted]	N	816-513-7807		



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
KC NORTH COMMUNITY CENTER**

Project No. 07061111

Project Title: Bid Package No. 6 for the ADA Compliance Project for the KC North Community Center
Location: 3930 NE Antioch Road, Kansas City, MO 64117

Date: May 6, 2015 Time: 10:15 AM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
KES Construction	Monte McGeary <i>Monte McGeary</i>	Yes	913-822-3540		larry@kesconstruction.net
HARTUNE CONSTRUCTION	JENNIFER HART <i>JENNIFER HART</i>		816 921-6112	Same	jhart@hartunecom.com
Accessibility Remodeling	Bryan D Sunday <i>Bryan D Sunday</i>	Yes	913-207-4538		info@accessmodel.com
LittleJo's Spa	Brad Beason <i>Brad Beason</i>	No	913-721-3264	913-721-3144	brad@littlejoes.com
Piper-uno Arcanery's	Eric Piper <i>Eric Piper</i>	No	816 474-3050		eric.piper@piper-uno.com



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
KC NORTH COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the KC North Community Center
 Location: 3930 NE Antioch Road, Kansas City, MO 64117
 Date: May 6, 2015 Time: 10:15 AM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Gunter Construction	Tom Marten <i>[Signature]</i>	Y	913-362-7844	913-362-7845	bid@s@gunterkc.com
ACCESSIBILITY REMODELING	PAUL LIVING <i>[Signature]</i>	Y	816-935-0159		PAUL@ACCESSREMODEL.COM
Piper - Win	KEN LOW <i>[Signature]</i>				
Piper - Wind	CHRIS MARTIN <i>[Signature]</i>				
City of Reno	Jenny Harrison <i>[Signature]</i>				



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
TONY AGUIRRE COMMUNITY CENTER**

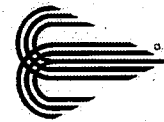
Project No. 07061111

Project Title: Bid Package No. 6 for the ADA Compliance Project for the Tony Aguirre Community Center

Location: 2050 W. Pennway Street, Kansas City, MO 64108

Date: May 6, 2015 Time: 11:15 AM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Tenach Construction	Jonna Jones Jonna Jones	Y			
Harover Commercial Contracting	Jim Burton Jim Burton	Y	816 398 0145		jon@harover.com
Infinite Energy Construction	Tim Albertson Tim Albertson	Y			
HARTUNG CONSTRUCTION	JENNIFER HARTUNG JENNIFER HARTUNG	Y	816 924 6072		
Forest yson Tyson Collee	Forest yson Forest yson	Y N/A	813 5805		Aty@tysoncollee.com



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**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
TONY AGUIRRE COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Tony Aguirre Community Center
 Location: 2050 W. Pennway Street, Kansas City, MO 64108
 Date: May 6, 2015 Time: 11:15 AM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
The Wilson Group	Jesse Hopkins <i>Jesse Hopkins</i>	Y	816 434 3189	816 537-0112	J.hopkins@ TheWilsonGroup.com
Gunter Construction	Tom Merten <i>Tom Merten</i>	Y			
BKM Construction LLC	Brent L. Mohay <i>Brent L. Mohay</i>	Y		913	
KES Construction	Monte M. Geurik <i>Monte M. Geurik</i>	Yes	816 739 1398		Larry@ KESconstruction.com



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
TONY AGUIRRE COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Tony Aguirre Community Center
 Location: 2050 W. Pennway Street, Kansas City, MO 64108
 Date: May 6, 2015 Time: 11:15 AM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Devine	Dew Arand Shannon Thornton	Yes	913.322.8882	913.322	
INFINITE ENERGY CONSTRUCTION IEC	Maek Newby 6/7/15	Yes			
Summit Hearing Jury	Donna Foster Alexandra Foster	N	913.350.3507 419.3507		Postcard 5000 N. 11th St. Louis, MO 63104
Piper-Wind	Chris Martin				
Piper-Wind	Ken Low				



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
TONY AGUIRRE COMMUNITY CENTER**

Project No. 07061111

Project Title: Bid Package No. 6 for the ADA Compliance Project for the Tony Aguirre Community Center

Location: 2050 W. Pennway Street, Kansas City, MO 64108

Date: May 6, 2015 **Time:** 11:15 AM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Accessibility Remodeling	Bryan Sunday <i>[Signature]</i>	Yes	913-207-1538		info@accessremodel.com
ACCESSIBILITY REMODEL	PAUL LILLIS <i>[Signature]</i>	Y			
Dayco Printing	Paul <i>[Signature]</i>	No	816 789 5127		stuart@daycoprinting.com
City of KC MO	Jenny Harriman <i>[Signature]</i>				



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
BRUSH CREEK COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Brush Creek Community Center
 Location: 3801 Emanuel Cleaver II Boulevard, Kansas City, MO 64130
 Date: May 6, 2015 Time: 2:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
IEC INFINITE ENERGY CONSTRUCTION	Mark Newby <i>[Signature]</i> 6 May 13	YES	816-763-7471		MARK@IEC EA.COM
Infinite Energy Construction	Tim Albertson <i>[Signature]</i>				
Gunter Construction	Tom Marten <i>[Signature]</i>	Y			



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
BRUSH CREEK COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Brush Creek Community Center
 Location: 3801 Emanuel Cleaver II Boulevard, Kansas City, MO 64130
 Date: May 6, 2015 Time: 2:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
YES Construction	Monte McGeorge Monte McGeorge	Yes	816 739 1398		larry@kesconstruction.net
Accessibility Remodeling	Boyron D. Smiley B. Smiley	Yes			
BKM Construction LLC	Duane C. Motley Duane C. Motley	Yes	913-832 4393		



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
BRUSH CREEK COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Brush Creek Community Center
 Location: 3801 Emanuel Cleaver II Boulevard, Kansas City, MO 64130
 Date: May 6, 2015 Time: 2:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
The Wilson Group	Jesse Hopkins Jim Hopkins	Y	816 434 3189	816 537 0113	
Summit Floeing, AND TURF	Dana Foster Alexandra	N	816 419-3560		Assess- Summitfloeing and turf
Piper - Wind	Chris Martin				
Piper - Wind	Ken Low				



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
BRUSH CREEK COMMUNITY CENTER**

Project No. 07061111

Project Title: Bid Package No. 6 for the ADA Compliance Project for the Brush Creek Community Center

Location: 3801 Emanuel Cleaver II Boulevard, Kansas City, MO 64130

Date: May 6, 2015 Time: 2:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
[REDACTED]	JENNIFER HART	Y	916-921-0002 →		jhart@harrison.com
Dyco Printing Inc	Steve Miller	N	816-761-3388 721-3422		Steve Miller dycoprintings.com
ACCESSIBILITY REMODEL	PAUL LUDIG Paul Ludig	Y			
LITTLE JAC'S ASSAULT	BEND BESSON B	Y	913-721-3261 3261	913-721-3144	



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
BRUSH CREEK COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Brush Creek Community Center
 Location: 3801 Emanuel Cleaver II Boulevard, Kansas City, MO 64130
 Date: May 6, 2015 Time: 2:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Vazquez Commercial Contracting	Jay Burton <i>[Signature]</i>	Y	816 398 0145		Jay@Vazquez.com
Trench Construction	Jonna Jones <i>[Signature]</i>	Y	913-671-7706		
City of KC MO	Jenny Harrison <i>[Signature]</i>				



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
HILLCREST COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Hillcrest Community Center
 Location: 10401 Hillcrest Road, Kansas City, MO 64134
 Date: May 6, 2015 Time: 3:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Accessibility Renodeling	Boyon D. Sunds <i>[Signature]</i>	YES			
ACCESSIBILITY RENODELING	PAUL LILLEG <i>[Signature]</i>	Y			
HARDLINE CONSTRUCTION	PAUL LILLEG <i>[Signature]</i>	Y	9-921-6002	9-921-6002	jharve WATLINE@KCMO.ORG



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
HILLCREST COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Hillcrest Community Center
 Location: 10401 Hillcrest Road, Kansas City, MO 64134
 Date: May 6, 2015 Time: 3:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
VAZQUEZ COMMERCIAL CONTRACTOR	Jay Bulow <i>[Signature]</i>	Y	814-398-0145		Jay b@VAZQUEZ.COM
Summit Flooring and Dry	Donna Foster <i>[Signature]</i>	N	216 419 3567		
	<i>[Signature]</i>				



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
HILLCREST COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Hillcrest Community Center
 Location: 10401 Hillcrest Road, Kansas City, MO 64134
 Date: May 6, 2015 Time: 3:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Tenoch Construction	Jonna Jones Jonna Jones	Y	(913) 671-7700		
KES Construction	Monte McGeary Monte McGeary	Yes			



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
HILLCREST COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Hillcrest Community Center
 Location: 10401 Hillcrest Road, Kansas City, MO 64134
 Date: May 6, 2015 Time: 3:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
Infinite Energy Construction	Tim Albertson	Y			
	Tim Albertson				
INFINITE ENERGY CONSTRUCTION	Mark Neuhof	Yes			
	Mark Neuhof				
The Wilson Group	Jesse Hopkins	Y			
	John Joseph				



**MANDATORY SITE TOUR FOR PARKS & RECREATION DEPARTMENT
HILLCREST COMMUNITY CENTER**

Project No. 07061111
 Project Title: Bid Package No. 6 for the ADA Compliance Project for the Hillcrest Community Center
 Location: 10401 Hillcrest Road, Kansas City, MO 64134
 Date: May 6, 2015 Time: 3:00 PM

	Print Name and Signature	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address
BKM Constave LLC	Brent L. Moby <i>[Signature]</i>	Y	713-852-4593		
Gunter Consti	Tom Merten <i>[Signature]</i>	Y			
Piper - Wind	Chris Martin				
Piper - Wind	Ken Low				
City of KC MO	Jenny Harrison <i>[Signature]</i>				

Bidder: _____

CITY OF FOUNTAINS
HEART OF THE NATION



KANSAS CITY
MISSOURI

ITEMIZED PRICES

Project Number: 07061111

Project Title: Bid Package No. 06 - ADA Compliance Project for
Parks Department - Community Centers

Item No.	Item Description:	Unit Price:
1.	Hillcrest Community Center	
2.	Kansas City North Community Center	
3.	Tony Aguirre Community Center	
4.	Brush Creek Community Center	

Note: May be printed, for manual fill-in, or filled in on electronic excel spreadsheet version.

CITY OF FOUNTAINS
HEART OF THE NATION



KANSAS CITY
MISSOURI

ADDENDUM NUMBER 1

Project Number 07061111

Project Title Bid Package No. 6 - ADA Compliance Project for Parks and Recreation Department - Community Center Facilities

County Clay

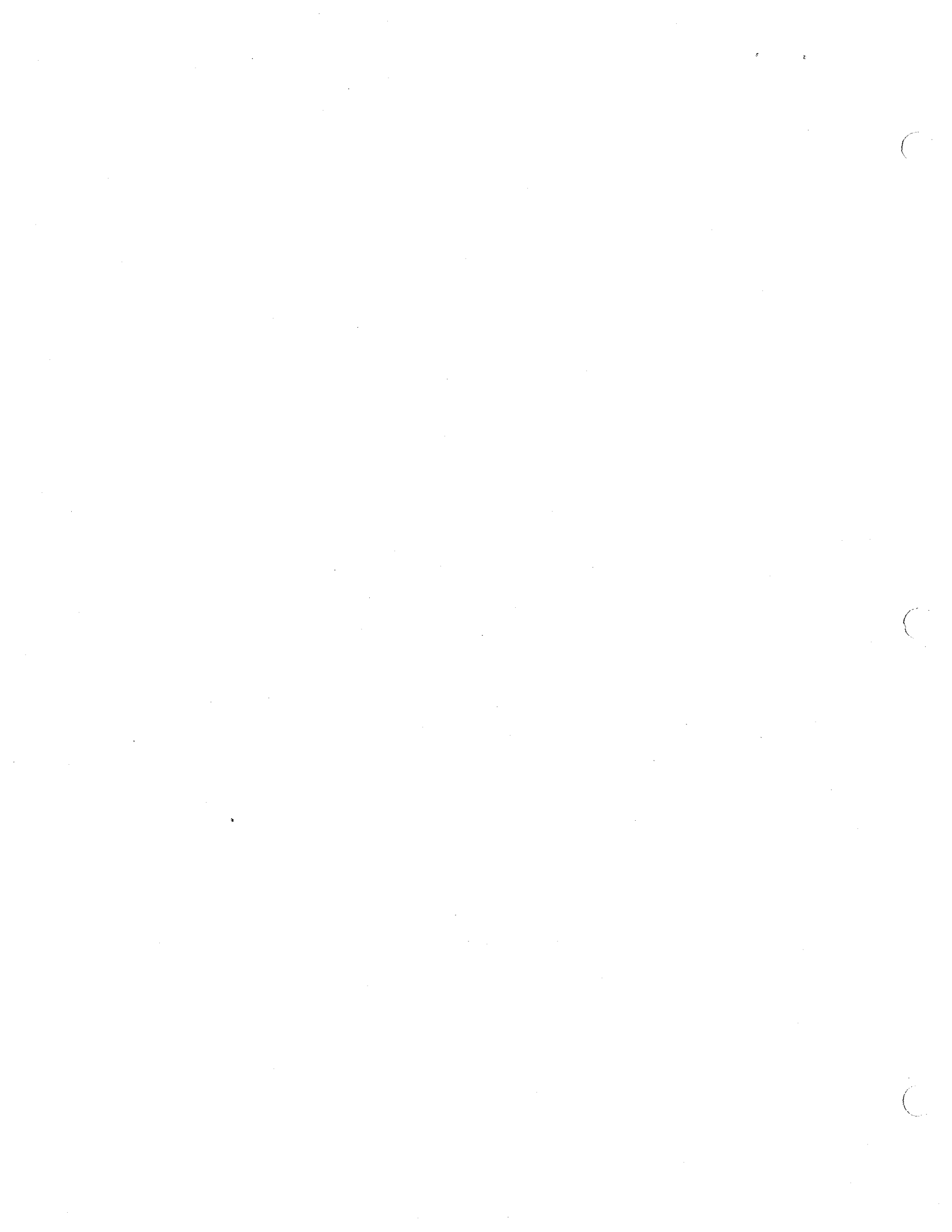
ISSUE DATE: May 1, 2015

Bidders are hereby notified that the Bidding and Contract Documents for the above project, for which Bids are to be received on **Tuesday, May 19, 2015**, are amended as follows:

Information to Bidders The following is provided to Bidders for information only:

1. Attached is the Attendance list for the mandatory Pre-Bid Meeting.

NOTE: Bidders must acknowledge receipt of this Addendum by listing the number and date, where provided, on the Bid Form - Document 00410.





MANDATORY PRE-BID CONFERENCE - ATTENDANCE

Project No. 07061111 and 07071111 and 07081111 and 07091111 and 07101111
 Project Title: Bid Packages No. 6-10 for the ADA Compliance Project
 Location: City Hall, City of Kansas City, MO, 414 E. 12th St., 4th Fl., East Conf. Room, Kansas City, MO 64106
 Date: April 30, 2015 Time: 2:30 PM

Name	Organization	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address	Number of People that will attend Mandatory Tours by Bid Package				
						6	7	8	9	10
Monte George	KES Construction	Yes	913 322 3540	913 498 0338	Larry@kesconstruction.net	1				
JENNIFER HART	HARTLINE CONST.	YES	916. 921-6002	916. 921-6002	jhart@hartlinecon.com	1				
Bill Leary	LABORES# 264	NO	816 985 3878	561 1000		1				
Shannon Norton	DEV INC.	Yes	913-322 8882	913-322 8886	Shannon@dev-inc.com	1	1	1	1	1
MARK NEALEY	IEC	YES	816 763 7471		MARK@IECEA.COM	1				
Brent L. Motley	BKM Construction LLC	Yes	913 832-4393		bmotley@bkmconstructionllc.com	1				





MANDATORY PRE-BID CONFERENCE - ATTENDANCE

Project No. 07061111 and 07071111 and 07081111 and 07091111 and 07101111
 Project Title: Bid Packages No. 6-10 for the ADA Compliance Project
 Location: City Hall, City of Kansas City, MO, 414 E. 12th St., 4th Fl., East Conf. Room, Kansas City, MO 64106
 Date: April 30, 2015 Time: 2:30 PM

Name	Organization	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address	Number of People that will attend Mandatory Tours by Bid Package				
						6	7	8	9	10
Robi Hoop	P ^{ro} Const Solutions	N	816 308 5247							
CHRISTINA Moberley	moberley enterprises llc	N	(816) 756-7185 (816)	895-3314	moberley.com eYmail.com					
MARK BOWMAN	KC PARKS	N	816 513 7007							
D. Merino	Straub	Y	913 451 8828		dmerino@StraubConstruction.com	1	1	1	1	1
Jason Parson	PoA	N	816-547-8736		Jason e Parson@kc.com					
CHRIS MARTIN	PIPER-WIND	N	816 474 3050		C.MARTIN@PIPER-WIND.COM					

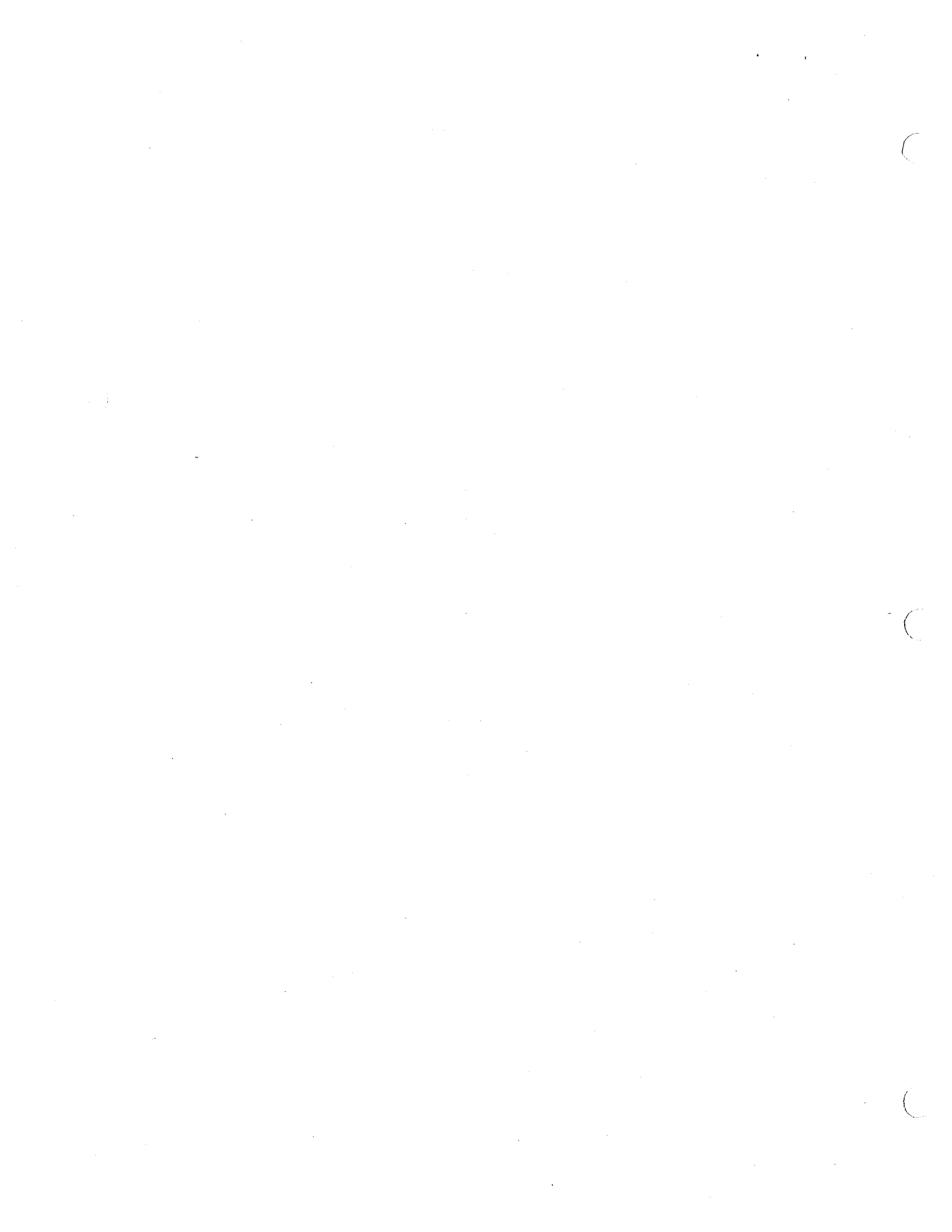




MANDATORY PRE-BID CONFERENCE - ATTENDANCE

Project No. 07061111 and 07071111 and 07081111 and 07091111 and 07101111
 Project Title: Bid Packages No. 6-10 for the ADA Compliance Project
 Location: City Hall, City of Kansas City, MO, 414 E. 12th St., 4th Fl., East Conf. Room, Kansas City, MO 64106
 Date: April 30, 2015 Time: 2:30 PM

Name	Organization	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address	Number of People that will attend Mandatory Tours by Bid Package				
						6	7	8	9	10
Joshua Hopkins	The Wilson Group	yes	8165370212	816537	twgjosh@gmail.com	2	2	2	2	2
PONIA FOSTER	SUMMIT FLOORING AND TURF	NO	816-419-3569		ffoster@summitflooringandturf.com	-	-	-	-	-
Jesse Williams	J. Williams & Assoc, LLC	NO	913-620-3908		JEN380@gnail.com					
Steve Kuhn	Dyno Building Inc	N/A	816 761-3353	816-763-2773	Steve.Kuhn@dynobuilding.com					
Reed Lillard	RLMO	N/A	816 513 4529		Reed.Lillard@rlmo.org					
Tami Jordan	River Works Electric	NO	816 880 41030	816 880 4738	tami@riverworkselectric.com					

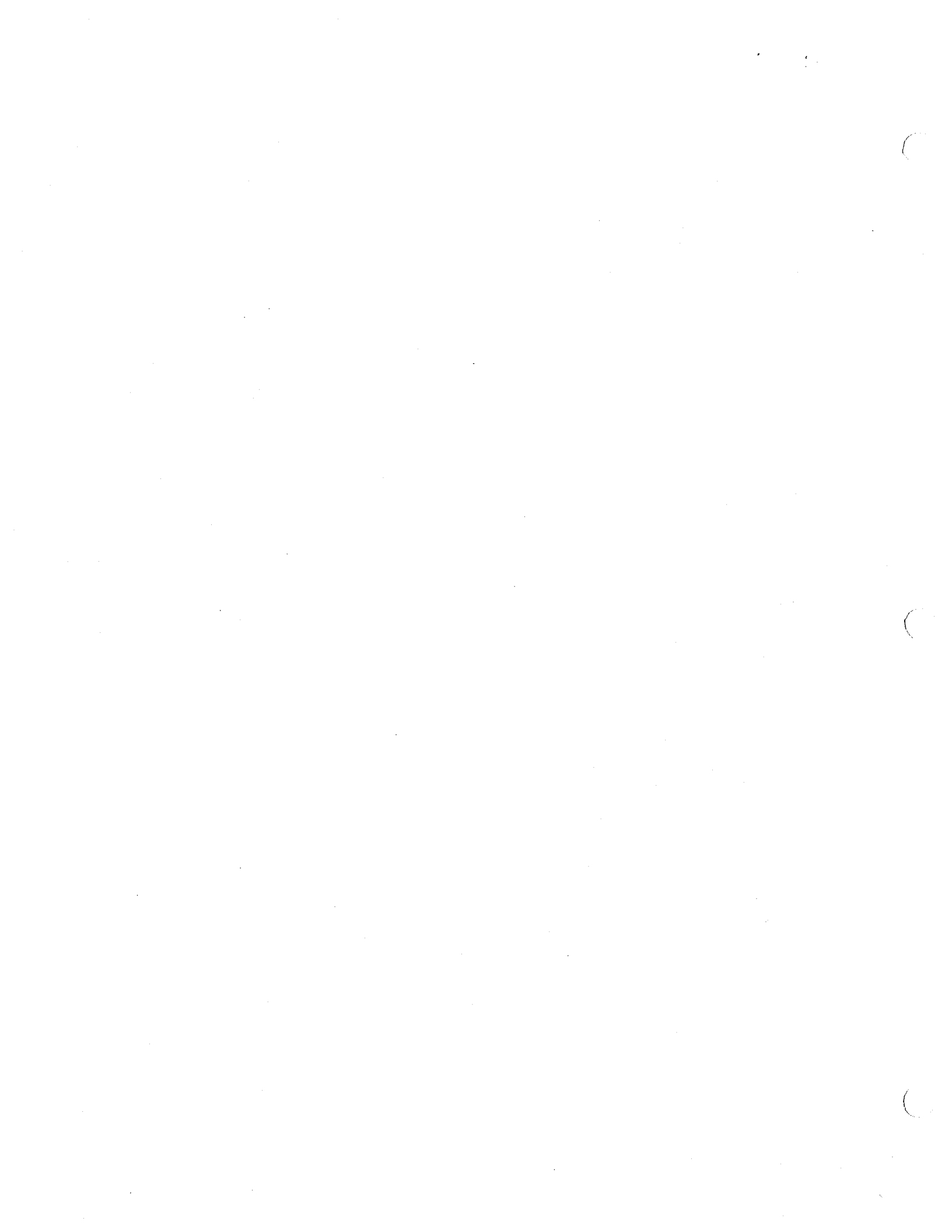


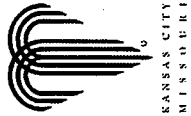


MANDATORY PRE-BID CONFERENCE - ATTENDANCE

Project No. 07061111 and 07071111 and 07081111 and 07091111 and 07101111
 Bid Packages No. 6-10 for the ADA Compliance Project
 City Hall, City of Kansas City, MO, 414 E. 12th St., 4th Fl., East Conf. Room, Kansas City, MO 64106
 Date: April 30, 2015 Time: 2:30 PM

Name	Organization	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address	Number of People that will attend Mandatory Tours by Bid Package				
						6	7	8	9	10
George Gunter	Gunter Const	Y	913 362 7844	913 362 7845	Bids@GunterKc.com	3	3	3	3	3
Tom Morten	Gunter Const	Y	913-362 7844	913 362 7845	Bids@GunterKc.com	3	3	3	3	3
Paul Thomas	JUSTITIE Stamps Signs	N	816-421-5010	816 421-1939	justite@adl.com justite@adl.com	1	1	1	1	1
Chris Kane	Kc mo	N	816 513 1429	816 513 1805	Christopher Kane @ Kc mo.org					
JAY BURTON	VAZQUEZ cc	Y	816 398 0145		JayB@VAZQUEZCC.COM					
Beno Becard	LITTLE-JAC'S ASBEST	N	(913) 721-3261	913 721-3261	beno@littlejac.com	1	1	1	1	1

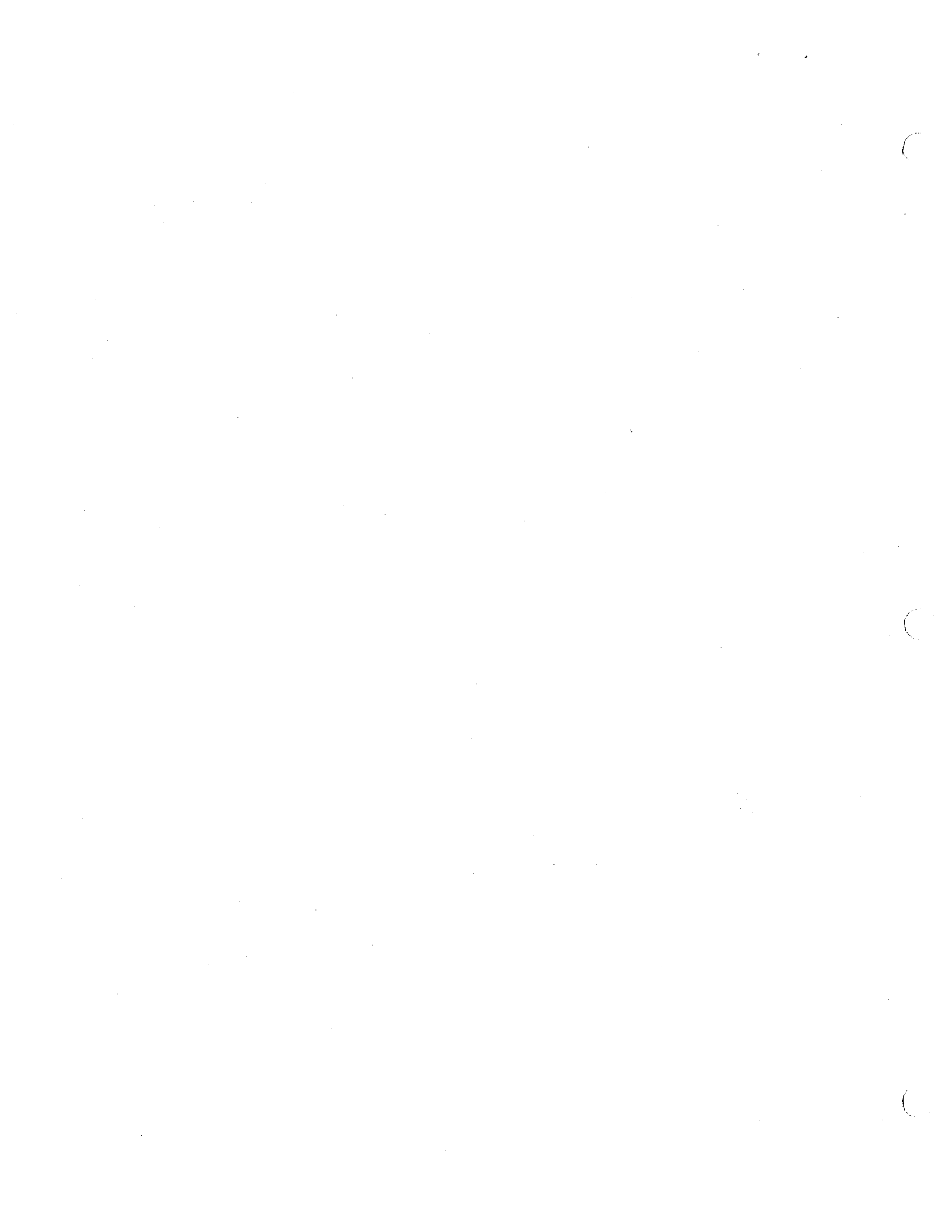


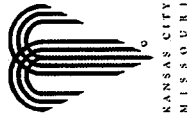


MANDATORY PRE-BID CONFERENCE - ATTENDANCE

Project No. 07061111 and 07071111 and 07081111 and 07091111 and 07101111
 Project Title: Bid Packages No. 6-10 for the ADA Compliance Project
 Location: City Hall, City of Kansas City, MO, 414 E. 12th St., 4th Fl., East Conf. Room, Kansas City, MO 64106
 Date: April 30, 2015 Time: 2:30 PM

Name	Organization	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address	Number of People that will attend Mandatory Tours by Bid Package			
						6	7	8	9 10
TOM REZOS NERZ	VAZQUEZ	Y	816 405-7192	-	-				
Jordan Bryant	Varquez	Y	816-714 9440	-	-				
DeVonia Merino	The Studio LLC	N	816 2889393	-	devonia1989@gmail.com	1	1	1	1
Otho Sweet	Mark One Electric	N	816-646-6779		316.SweetMarkOne.Com				
Bayon Sunday	Accessibility Renovation	Y	913-207-4538		info@accessmodel.com				
Eric Piper	Piper - wind.com	N	816-474-3050		eric.piper@mol.com				

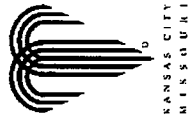




MANDATORY PRE-BID CONFERENCE - ATTENDANCE

Project No. 07061111 and 07071111 and 07081111 and 07091111 and 07101111
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 Date: April 30, 2015 Time: 2:30 PM

Name	Organization	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address	Number of People that will attend Mandatory Tours by Bid Package				
						6	7	8	9	10
Sonya Segura Ulrich	Tenach Construction Inc	Y R	913 671-7706	913 671 7307	sonya @ tenachconstruction.com	11	11	11	11	11
DeWayne Beasley	Yelsaeb Enterprises LLC	Just pass test	(816) 914-5823		Yelsaeb@sbcglobal.net	1				
Ryan Johnson	Builders' Association	N	816-531-4741							
RYAN McMASTER	AMINO BROTHER	Y	913.334.1330	913.334.0144	ryan@aminobros.com	1	1	1	1	1
VALENE JOHNSON	KCMAO-HRD	N	916-513-1406		valeric.johnson@kcmao.org					
Teresa Cangelosi	citykcmo HRD	N	816 513-1438		teresa.cangelosi@kcmo.org					



MANDATORY PRE-BID CONFERENCE - ATTENDANCE

Project No. 07061111 and 07071111 and 07081111 and 07091111 and 07101111
Project Title: Bid Packages No. 6-10 for the ADA Compliance Project
Location: City Hall, City of Kansas City, MO, 414 E. 12th St., 4th Fl., East Conf. Room, Kansas City, MO 64106
Date: April 30, 2015 **Time:** 2:30 PM

Name	Organization	Are you a General Contractor? (Y/N?)	Phone Number	Fax Number	E-Mail Address	Number of People that will attend Mandatory Tours by Bid Package			
						6	7	8	10
KEN LOW	PIPER-WIND	N	816 4743052		K. LOW@ PIPER-WIND COM.				
Jenny Harmon	City of KCMO	No	616 502-3398						





REQUEST FOR INTERPRETATION

Project Number _____

Project Title _____

Contractor _____

RFI Number _____ Date _____

From: _____

To: _____

Re: _____

Spec. Sec. Ref: _____ Paragraph: _____ Drawing Ref: _____ Detail: _____

Signed: _____

Response: _____

Attachments

Response From: _____ To: _____ Date Transmitted: _____ Date Rec'd: _____

Signed: _____

Design Professional

Signed: _____

Owner's Representative

Distribution: Owner

Contractor

Construction Manager

Design Professional

Consultant _____

Other _____



SUPPLEMENTAL DESIGN INSTRUCTION

Project Number _____

Project Title _____

To Contractor _____

From: _____ SDI No _____ Issue Date: _____

The Work shall be carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Price or Contract Times. Proceeding with the Work in accordance with these instructions indicates your acknowledgement that there will be no change in the Contract Price or Contract Times.

Description:

Attachments (*List*)

(Signature) Design Professional

Date

- Distribution:
- Owner
 - Contractor
 - Construction Manager
 - Design Professional
 - Consultant _____
 - Other _____



REQUEST FOR PROPOSAL

Project Number _____

Project Title _____

To Contractor _____

From: _____ RFP No _____ Issue Date: _____

Please submit an itemized proposal for changes in the Contract Price and Contract Times for proposed modifications to the Contract Documents described herein. Submit proposal within _____ days, or notify the Owner in writing of the date on which you anticipate submitting your proposal.

This is NOT a Change Order, a Work Change Directive or a direction to proceed with the work described in the proposed modifications.

Description: _____

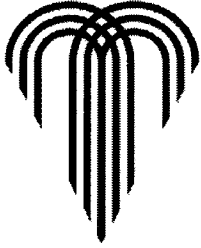
Attachments _____

Prepared by Design Professional _____

Prepared by Construction Manager _____

REQUESTED by OWNER'S Representative _____

- Distribution:
- Owner
 - Contractor
 - Construction Manager
 - Design Professional
 - Consultant _____
 - Other _____



CHANGE ORDER

Project Number _____

Project Title _____

Change Order No: _____ Date of Issuance: _____

Ordinance No: _____ Ordinance Effective Date: _____
Contract Notice To Proceed Date: _____

To CONTRACTOR:

The Contract is changed as follows: _____

This Change Order constitutes compensation in full on behalf of the Contractor and its subcontractors and suppliers for all costs, including impact costs and extended general conditions, and markups directly and indirectly attributable to the Work changes ordered herein, for all delays related thereto and for performance of the changes within the time stated. Contractor hereby releases all claims for delay, interruption, extended general conditions, impact and cumulative impact claims for this Work.

[Note: Identify the specific attachments; example: "Attachment A, Additional Scope of Services." Delete all notes before printing final]

See Attached Document(s).

[Note: If the CO does not change the Contract Price, use "Director" instead of "Director of Finance"]

Not valid until signed by the Director of Finance.

The original Contract Price was	\$0.00
Net change by previously authorized Change Orders	\$0.00
The Contract Price prior to this Change Order was	\$0.00
The Contract Price will be (<input type="checkbox"/> increased by) (<input type="checkbox"/> decreased by) (<input type="checkbox"/> unchanged)	\$0.00
The new Contract Price including this Change Order will be	\$0.00
[Note: If revised, establish and enter new dates. If unchanged, enter current contract dates.]	
If you are only changing the Final Completion date, add the following reference:	
"The Contract Time for Final Completion will be . . ."	_____
The Contract Time will be (<input type="checkbox"/> increased by) (<input type="checkbox"/> decreased by) (<input type="checkbox"/> unchanged)	() calendar days
The date of Substantial Completion as of the date of this Change Order therefore is	Enter Date
The date of Final Completion as of the date of this Change Order therefore is	Enter Date

Project No. & Title
Change Order No.

[Note: Include any required additional signatures.]

DESIGN PROFESSIONAL:	By:	Date:
	Title:	
CONTRACTOR:	By:	Date:
	Title:	
CITY:	By:	Date:
	Title:	

Approved as to form: _____
Assistant City Attorney

[Note: If this CO does not change the Contract Price, delete the cert. of funds by Finance Director but send signed copy to Finance.]

I certify there is a balance otherwise unencumbered to the credit of the appropriation to which the above amount is chargeable, and a cash balance otherwise unencumbered in the treasury to the credit of the fund from which payment is to be made, each sufficient to meet the above obligation.

By: _____
Director of Finance Date

- Distribution:
- CITY
 - CONTRACTOR
 - DESIGN PROFESSIONAL

REMINDER: CONTRACTOR is responsible for considering the effect this Change Order may have on its ability to meet or exceed the D/M/WBE participation amounts in its Contractor Utilization Plan (CUP) as amended by any previously approved Request for Modification/Substitution. If CONTRACTOR will not be able to achieve the approved participation amounts in performing the work included within this Change Order, or if CONTRACTOR needs to retain the services of additional D/M/WBES not previously listed in its CUP, CONTRACTOR is advised to submit a Request for Modification/Substitution.



WORK CHANGE DIRECTIVE

Project Number _____

Project Title _____

No.: _____ Date of Issuance: _____

TO:
(CONTRACTOR)

You are directed to proceed promptly with the following work:

Description:

Purpose of Work Change Directive:

Attachments: *(List documents supporting change)*

If the above work results on a change in the Contract Price or Contract Times, any request for a Change Order based thereon will involve one or more of the following methods of determining the effect of the change(s).

Method of determining change in
Contract Price:

Method of determining change in
Contract Times:

- Unit Prices
- Lump Sum
- As Stipulated in General Conditions
- Other _____

- CONTRACTOR's Records
- DESIGN PROFESSIONAL's Records
- City's Records
- Other _____

Estimated increase (decrease) in Contract Price:
\$ _____

Estimated increase (decrease) in Contract Times:
Substantial Completion: _____ days;

If the change involves an increase, the estimated Amount is not to be exceeded without further authorization.

Final Completion: _____ days.
If the change involves an increase, the estimated times are not to be exceeded without further authorization.

Recommended:

Recommended:

Recommended:

DESIGN PROFESSIONAL

Construction Manager

City

By (Authorized Signature)

By (Authorized Signature)

By (Authorized Signature)

- Distribution:
- City
 - Contractor
 - Construction Manager
 - Design Professional
 - Consultant
 - Other

WORK CHANGE DIRECTIVE (“WCD”) INSTRUCTIONS

[Note: Do not attach these instructions to the WCD Form]

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order. If the WCD may result in an increase in the Contract Price, a contract impact cost analysis must be performed prior to issuing the WCD. Availability of funds and authorization to expend funds must be part of the analysis.

For supplemental instructions and minor changes not involving a possible change in the Contract Price or the Contract Times a Supplemental Design Instruction may be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

Based on conversations between Design Professional, City’s Representative and CONTRACTOR, Design Professional must complete the following:

DESCRIPTION: shall include a summary of the Work included in the WCD. Additional information may be attached to the WCD to further define the scope.

PURPOSE OF WORK CHANGE DIRECTIVE: will identify clearly if the Work included in the WCD is an addition, deletion, revision, or some combination.

ATTACHMENTS: shall identify all attachments included in and made a part of the WCD. Be certain that attachments are clearly labeled.

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another WCD must be issued to change the estimated price. Do not leave blank spaces or write “To be determined” (or “TBD”). An estimated dollar figure must be assigned to the Work. If the WCD is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked “No Change in Price”.

METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT TIMES: Mark the method to be used in determining the change in Contract Times and the estimated increase or decrease in Contract Times. If the change involves an increase in the Contract Times and the estimated times are approached before the additional or changed Work is completed, another WCD must be issued to change the times or CONTRACTOR may stop the changed Work when the estimated times are reached. Do not leave blank spaces or write “To be determined” (or “TBD”). If the WCD is not likely to change the Contract Times, the space for estimated increase (decrease) should be marked “No Change in Times”.

Once Design Professional has completed and signed the form, all copies should be sent to CITY for authorization because Design Professional does not have authority to authorize changes in Price or Times. Once authorized by CITY, a copy must be sent by Design Professional to CONTRACTOR. Price and Times may only be changed by Change Order signed by CITY, Design Professional, and CONTRACTOR. If the value of the work included in the WCD exceeds the contingency or budget available for the contract, staff must obtain written approval from the Director or his or her designee before the WCD is issued. A Director or his or her designee may not approve a WCD that will exceed City Council authorization. If the work included in the WCD is needed as a result of an emergency, staff may proceed with the issuance of the WCD without

prior written approval even if the value of the work added is expected to exceed the contract contingency balance.

Once the Work covered by this directive is completed or final cost and times are determined. CONTRACTOR must submit proper documentation for inclusion in a Change Order.

IF THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR THE CONTRACT TIMES A CHANGE ORDER, IF ANY, MUST BE PROCESSED PROMPTLY.

SECTION 01210 – ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including 00700 General and 00800 Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Form 00413 Allowance Form
- C. Form 01210.01 Allowance Authorization.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
 - 1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Funds will be drawn from the allowance by issuance of document 01210.01 Allowance Authorization.
- C. At Project closeout, unused amounts remaining in the allowance will be credited to the Owner by Change Order.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Design Professional of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Design Professional's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Design Professional from the designated supplier.

1.4 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.5 UNUSED MATERIALS

- A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Design Professional, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Design Professional, deliver unused material to Owner's storage space.
 - 2. Submit to Owner an itemized listing of inventory with unit price information.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Lump-Sum Allowance: Include the sum of \$94,500.00 for all signage as required in the documents.
 - 1. This allowance includes removal of all existing signs, patch and repair of wall/doors surfaces damaged during removal, painting of patched areas to match existing wall/door colors, and furnishing and installing all new ADA signage as listed in the documents.

END OF SECTION 01210



ALLOWANCE AUTHORIZATION

Project Number _____

Project Title _____

To: _____

Authorization Number: _____

Re: _____

From: _____

Date: _____

Contract For: _____

You are authorized to perform the following item(s) of work and to adjust the Allowance Sum accordingly:

This is NOT a CHANGE ORDER and does NOT INCREASE OR DECREASE the CONTRACT AMOUNT.

Original Allowance	\$ _____
Allowance Expenditures prior to this Authorization	\$ _____
Allowance Balance prior to this Authorization	\$ _____
Allowance will be <input type="checkbox"/> increased] <input type="checkbox"/> decreased] by this Authorization	\$ _____
New Allowance Balance	\$ _____

APPROVAL RECOMMENDED

CITY APPROVAL

Design Professional Date

City's Representative Date

CONTRACTOR ACCEPTANCE

Construction Manager Date

Contractor Date

Attachments:

- Distribution:
- City
 - Contractor
 - Construction Manager
 - Design Professional
 - Consultant
 - Other



APPLICATION FOR PAYMENT

Project Number _____

Project Title _____

Final Payment⁵

CONTRACTOR _____

Address _____

Application Number²: _____

Date: _____

Ordinance/Resolution Number: _____

Effective: _____

PO Number _____

Vendor Number _____

Application for Work Accomplished from _____

to _____

Original Contract Price	[1]		\$	-
Net by Change Orders through _____		[2]	\$	-
Current Contract Price (1+2)		[3]	\$	-
Completed Work	[4]	\$	-	
Disputed Amounts ³	[-] [4a]	\$	-	
Stored Material ⁴	[5]	\$	-	
Disputed Amounts ³	[-] [5a]	\$	-	
Total Completed and Stored to Date (4+5)		[6]	\$	-
Previous Payments	[7]	\$	-	
Previous Retainage	[8]	\$	-	
Total Previous Applications (7+8)		[9]	\$	-
Amount This Application (6-9)		[10]	\$	-
Less Retainage This Application (5%)		[-] [11]	\$	-
Release of Retainage		[12]	\$	-
Total Due This Application (10-11+12)		[13]	\$	-
Liquidated Damages				
Completion of Work	[14]	\$	-	[-] \$ -
Prevailing Wage ⁷	[15]	\$	-	[-] \$ -
MBE/WBE Program ⁷	[16]	\$	-	[-] \$ -
Workforce Program ⁷	[17]	\$	-	[-] \$ -
Total Amount Due Contractor (13 - 14 through 17)		[18]	\$	-

Accompanying Documentation: ^{1, 2, 3, 4, 5, & 6} and any other information as necessary.

NOTE: Initial all figures on this Application and on the Schedule of Values that are changed to correct errors or conform to the amount recommended. Attach explanation of changes that have been made.

CONTRACTOR's Certification:

The undersigned CONTRACTOR certifies that (a) all previous progress payments received from OWNER on account of Work done under this Contract have been applied on account to discharge CONTRACTOR's legitimate obligations incurred in connection with Work covered by all prior Applications for Payment; (b) at time of payment, title of all Work, materials and equipment incorporated into said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (c) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective; and (d) all manufactured goods or commodities used or supplied for this Project are in compliance with Kansas City's Buy America ordinance.

_____ By _____
 Contractor Authorized Representative (Print) Signature

Date _____

State of _____)
)SS
 County of _____)

Subscribed and Sworn to before me this _____ day of _____.

My commission expires: _____

Notary Public: _____

DESIGN PROFESSIONAL's Recommendation of Payment:

In accordance with the Contract Documents, based on on-Site observations and the data comprising this application, the DESIGN PROFESSIONAL recommends to the OWNER that to the best of the DESIGN PROFESSIONAL's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the CONTRACTOR is entitled to payment of the Amount above listed in this application.

Name of firm (Print) DESIGN PROFESSIONAL (Print) (Signature)

Date: _____

Construction/Program Manager's Recommendation of Payment: (if applicable)

In accordance with the Contract Documents, based on on-Site observations and the data comprising this application, the Construction/Program Manager recommends to the OWNER that to the best of the Construction/Program Manager's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the CONTRACTOR is entitled to payment of the Amount above listed in this application.

Construction/Program Manager firm (Print) Authorized Representative (Print) (Signature)

Date: _____

City's Representative's Agreement with Recommendation of Payment

City's Representative(print) (Signature) (Date)

City's Approval

The amount previously recommended is approved for payment.

Director or Designee (Print) (Signature) (Date)

¹See General Conditions Article 14.02 A and B

²Proof of tax compliance if 1st payment and if Contract amount exceeds \$150,000.00

³Schedule of Values--Denote any amounts currently disputed in this application. Attach additional dispute documentation if required.

⁴If requesting payment for stored materials, see General Conditions Article 14.02 A.1

⁵If final payment, current proof of tax compliance if Contract is longer than 1 year and amount exceeds \$150,000.00.

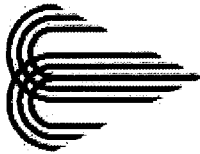
⁶ Per General Conditions Sec. 14.02 attach a copy of the most recent 00485.01 M/WBE Monthly Utilization Report, 00485.02

Project Workforce Monthly Report and 00485.03 Company-Wide Workforce Monthly Report CONTRACTOR has submitted to the City's Human Relations Department

⁷Applicable only if final payment

REMINDER: CONTRACTOR is responsible for meeting or exceeding the the D/M/WBE participation amounts in its Contractor Utilization Plan (CUP) as amended by any previously approved Request for Modification/Substitution. Any Change Orders or amendments modifying the amount CONTRACTOR is to be compensated will have correspondingly impacted the amount of compensation due D/M/WBEs for purposes of meeting or exceeding the Bidder/Proposer participation. CONTRACTOR is again reminded to consider the effect of any Change Order or amendment, and to submit a Request for Modification/Substitution if appropriate.

Distribution: Owner Project Manager
 Contractor Design Professional
 Construction Manager _____



SUBCONTRACTORS AND MAJOR MATERIAL SUPPLIERS LIST

KCMO ADA Compliance, Package

Project Title #6, Community Centers

Project Number 07061111

From Contractor **BKM-IEC LLC**

Date

To

Spec. No.	Section Title	4	Firm, Address (Check box if Supplier)	Phone, FAX and e-mail	Contact
22	Plumbing		Pro-Mechanical, LLC 705 B SE Melody LN #323 Lee's Summit, MO 64063	816-982-0775 todd@pro-mechanical.net	Todd Remington
5	Metals		Standard Sheetmetal 405 North Olive Street Kansas City, MO 64120	816-221-5434 'Jack Dickey' <JDickey@ssm-kc.com>	Jack Dickey
3	Concrete		Gunter Construction 520 Division Street Kansas City, KS 66103	913-362-7844 george@gunterkc.com	George Gunter
9	Painting		Dayco Painting 500 Zumwalt Grandview, MO 64030	816-761-3353 Steve Miller <stevem@daycopainting.com>	Steve Thompson
26	Electrical		Infinite Energy 13625 Oak Street Kansas City, MO 64145	816-763-74741 tim@iec8a.com	Tim Albertson
08, 10	Openings, Specialties		BKM Construction LLC 501 North 20th Street Leavenworth, KS 66048	913-290-1127 mmeyer@bkmconstructionllc.com	Mike Meyer

Attachments:

Signed by: *[Signature]* *Brent L. McHenry Managing Partner*

Date 09Jun15

Distribution: Owner Contractor Construction Manager Design Professional Consultant Other

JUN 9 2015





DAILY LABOR FORCE REPORT

Project Number _____ Day _____ Date _____

Project Title _____

Contractor _____

Subcontractor _____

Weather: (Indicate if weather prevented work and why) _____

Shift: (circle) 5–8 hr Days 4–10 hr Days Other _____

* This report *MUST* be completed and turned in for EACH DAY until FINAL COMPLETION.

Worker's Full Legal Name	Occupational Title or Classification Group & Skill	Hours Worked & Time (i.e. 10AM – 4PM)	Race & Gender

I CERTIFY THAT ALL OF THE INFORMATION PROVIDED ABOVE IS TRUE AND COMPLETE.

Contractor/Subcontractor Representative:

Complete Name: (print) _____ Title: (print) _____

Signature: _____

Page ____ of ____

Distribution: City Department Contractor Subcontractor Other



CERTIFICATE OF SUBSTANTIAL COMPLETION

Project Number _____

Project Title _____

CONTRACT FOR: _____

CONTRACTOR: _____

DATE OF ISSUANCE: _____

PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found, to the Design Professional's and/or Construction Manager's best knowledge, information and belief, to be substantially complete. Substantial Completion is the state in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of Project or portion thereof designated above is hereby established as _____ which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

CONSTRUCTION MANAGER BY _____ DATE _____

DESIGN PROFESSIONAL BY _____ DATE _____

The Contractor will complete or correct the Work on the list of items attached hereto within _____ days from the above date of Substantial Completion.

CONSTRUCTION MANAGER BY _____ DATE _____

DESIGN PROFESSIONAL BY _____ DATE _____

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at _____ (time) on _____ (date).

OWNER'S REPRESENTATIVE BY _____ DATE _____

- Distribution:
- Owner
 - Contractor
 - Construction Manager
 - Design Professional
 - Consultant _____
 - Other _____



PUNCH LIST

Project Number _____

Project Title _____

CONTRACTOR _____

From _____ Site Visit Date _____

The following items require the attention of the CONTRACTOR for completion or correction. This list may not be all-inclusive, and the failure to include any items on this list does not alter the responsibility of the CONTRACTOR to complete all Work in accordance with the Contract Documents.

Item No.	Location (Area)	Description	Correction/Completion Date	Verification Check
----------	-----------------	-------------	----------------------------	--------------------

Attachments

Signed by: _____

Date: _____

DESIGN PROFESSIONAL (Firm/In House)

- Distribution:
- OWNER
 - CONTRACTOR
 - DESIGN PROFESSIONAL
 - Consultant _____
 - Other _____



CONTRACTOR AFFIDAVIT FOR FINAL PAYMENT

Project Number _____

Project Title _____

STATE OF _____)
)SS
COUNTY OF _____)

The Undersigned, _____ of lawful
(Name)

age, being first duly sworn, states under oath as follows:

1. I am the _____ of _____ who is the general
(Title) (CONTRACTOR)
CONTRACTOR for the OWNER on Project No. _____ and Project Title _____.

2. All payrolls, material bills, use of equipment and other indebtedness connected with the Work for this Project have been paid and all Claims of whatever nature have been satisfied, as required by the Contract.

3. Prevailing wage does not apply; or
 All provisions and requirements set forth in Chapter 290, Section 290.210 through and including 290.340, Missouri Revised Statutes, pertaining to the payment of wages to workmen employed on public works projects have been fully satisfied and there has been no exception to the full and complete compliance with these provisions and requirements and the Annual Wage Order contained in the Contract in carrying out the Contract and Work. CONTRACTOR has fully complied with the requirements of the prevailing wage law as required in the Contract and has attached affidavits from all Subcontractors on this Project, regardless of tier, affirming compliance with the prevailing wage law as stipulated in the Contract.

4. I hereby certify that (a) at project completion and pursuant to contractor's final request for payment, contractor achieved (____%) Minority Business Enterprise (MBE) participation and (____%) Women Business Enterprise (WBE) participation on this contract, and (b) listed herein are the names of all certified M/WBE subcontractors, regardless of tier, with whom I, or my subcontractors contracted.

1. Name of MBE/WBE Firm _____
Address _____
Telephone Number (____) _____
IRS Number _____
Area/Scope*of Work _____
Subcontract Final Amount _____

2. Name of MBE/WBE Firm _____
Address _____
Telephone Number (____) _____
IRS Number _____
Area/Scope*of Work _____
Subcontract Final Amount _____

List additional subcontractors, if any, on a similar form and attach to the bid.

Supplier** Final Amount: _____

*Reference to specification sections or bid item number.

- (✓) ___ Met or exceeded the Contract utilization goals; or
- (✓) ___ Failed to meet the Contract utilization goals (attach waiver, substitution or modification); or
- (✓) ___ No goals applied to this Project.

5. CONTRACTOR certifies that each Subcontractor has received full payment for its respective work in connection with the Contract.

6. If applicable, I hereby certify that (a) at project completion and pursuant to contractor's final request for payment, contractor achieved, company-wide, at least ten percent (10%) minority workforce participation and two percent (2%) women workforce participation and (2) a true and accurate copy of my final project workforce monthly report (HRD Form 00485.02 and final company-wide workforce monthly report (HRD Form 00485.03) are attached. **NOTE: This paragraph is only applicable if you completed a construction contract that was estimated by the City, prior to solicitation, as requiring more than 800 construction labor hours and costing in excess of \$324,000.01. If applicable you MUST attach copies of your final monthly workforce reports.**

7. This affidavit is made in behalf of the CONTRACTOR for the purpose of securing from Kansas City, Missouri, the certification of completion of the Project and receiving payment therefore.

8. If the Contract amount exceeded \$123,500.01, CONTRACTOR has submitted proof of compliance with the City tax ordinances administered by the City's Commissioner of Revenue and has on file proof of tax compliance from all Subcontractors. If the Contract term exceeded one (1) year, CONTRACTOR has provided proof of compliance with the City tax ordinances administered by the City's Commissioner of Revenue prior to receiving final payment and has on file proof of tax compliance from all Subcontractors prior to the Subcontractor receiving final payment from CONTRACTOR.

CONTRACTOR _____

By _____
(Authorized Signature)

Title _____

On this _____ day of _____, _____, before me
appeared _____, to me personally known to be the
_____ of the _____,

and who executed the foregoing instrument and acknowledged that (s)he executed the same on behalf of
_____ as its free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on the day and year first above written.

My commission expires:

Notary Public



DEVELOPER AFFIDAVIT FOR FINAL CLOSE-OUT

Project Number _____

Project Title _____

STATE OF _____)
)SS
COUNTY OF _____)

The Undersigned, _____ of lawful
(Name)

age, being first duly sworn, states under oath as follows:

1. I am the _____ of _____
(Title) (Redeveloper)
that entered into a Redevelopment Agreement with _____ on Project No. _____
(Statutory Agency) (if applicable)
and Project Title _____.

2. All payrolls, material bills, use of equipment and other indebtedness connected with the Work for this Project have been paid and all Claims of whatever nature have been satisfied, as required by the Contract.

3. (✓) ___ Prevailing wage does not apply; or

(✓) ___ All provisions and requirements set forth in Chapter 290, Section 290.210 through and including 290.340, Missouri Revised Statutes, pertaining to the payment of wages to workmen employed on public works projects have been fully satisfied and there has been no exception to the full and complete compliance with these provisions and requirements and the Annual Wage Order in effect at the time of the Redevelopment Agreement carrying out the Contract and Work. REDEVELOPER has fully complied with the requirements of the prevailing wage law as required in the Redevelopment Agreement and has attached affidavits from all Subcontractors, including the General Contractor, on this Project, regardless of tier, affirming compliance with the prevailing wage law as stipulated in the Annual Wage Order applicable to this project.

4. I hereby certify that (a) at project completion and pursuant to contractor's final request for payment, contractor achieved (____%) Minority Business Enterprise (MBE) participation and (____%) Women Business Enterprise (WBE) participation on this contract, and (b) listed herein are the names of all certified M/WBE subcontractors, regardless of tier, with whom I, or my subcontractors contracted (attach additional sheets if needed).

1. Name of MBE/WBE Firm _____
Address _____
Telephone Number (____) _____
IRS Number _____
Area/Scope* of Work _____
Subcontract Final Amount _____

2. Name of MBE/WBE Firm _____
Address _____
Telephone Number (____) _____
IRS Number _____

Area/Scope*of Work _____
Subcontract Final Amount _____

List additional subcontractors, if any, on a similar form and attach to this form.

Supplier** Final Amount: _____

*Reference to specification sections or bid item number.

- (✓) ___ Met or exceeded the Contract utilization goals; or
- (✓) ___ Failed to meet the Contract utilization goals (attach waiver, substitution or modification); or
- (✓) ___ No goals applied to this Project.

5. REDEVELOPER certifies that each Subcontractor, including the General Contractor, has received full payment for its respective work in connection with the Contract.

6. If applicable, I hereby certify that (a) at project completion and pursuant to contractor's final request for payment, contractor achieved, company-wide, at least ten percent (10%) minority workforce participation and two percent (2%) women workforce participation and (2) a true and accurate copy of my final project workforce monthly report (HRD Form 00485.02 and final company-wide workforce monthly report (HRD Form 00485.03) are attached. **NOTE: This paragraph is only applicable if you completed a construction contract that was estimated by the City, prior to solicitation, as requiring more than 800 construction labor hours and costing in excess of \$300,000.00. If applicable you MUST attach copies of your final monthly workforce reports.**

7. This affidavit is made in behalf of the REDEVELOPER for the purpose of securing from _____ (name of the Statutory Agency) the certification of completion of the Project and receiving the requested tax incentive therefore.

8. If the Contract amount exceeded \$150,000, REDEVELOPER has submitted proof of compliance with the City tax ordinances administered by the City's Commissioner of Revenue and has on file proof of tax compliance from all Subcontractors. If the Contract term exceeded one (1) year, REDEVELOPER has provided proof of compliance with the City tax ordinances administered by the City's Commissioner of Revenue prior to receiving final payment and has on file proof of tax compliance from all Subcontractors prior to the Subcontractor receiving final payment from REDEVELOPER.

REDEVELOPER _____

By _____
(Authorized Signature)

Title _____

NOTARY

On this _____ day of _____, _____, before me

appeared _____, to me personally known to be the

_____ of the _____,

and who executed the foregoing instrument and acknowledged that (s)he executed the same on behalf of

_____ as its free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on the day and year first above written.

My commission expires:

Notary Public



SUBCONTRACTOR AFFIDAVIT FOR FINAL PAYMENT

Project Number _____

Project Title _____

STATE OF MISSOURI)

) ss:

COUNTY OF _____)

After being duly sworn the person whose name and signature appears below hereby states under penalty of perjury that:

1. I am the duly authorized officer of the business indicated below (hereinafter Subcontractor) and I make this affidavit on behalf of Subcontractor in accordance with the requirements set forth in Section 290.290, RSMo. Subcontractor has completed all of the Work required under the terms and conditions of a subcontract as follows:

Subcontract with: _____, Contractor

Work Performed: _____

Total Dollar Amount of Subcontract and all Change Orders: \$ _____

City Certified MBE WBE DBE NA

List certifications: _____

2. Subcontractor fully complied with the provisions and requirements of the Missouri Prevailing Wage Law set forth in Sections 290.210, RSMo through 290.340, RSMo.

Business Entity Type:

- Missouri Corporation
- Foreign Corporation
- Fictitious Name Corporation
- Sole Proprietor
- Limited Liability Company
- Partnership
- Joint Venture
- Other (Specify)

Subcontractor's Legal Name and Address

Phone No. _____

Fax: _____

E:mail: _____

Federal ID No. _____

I hereby certify that I have the authority to execute this affidavit on behalf of Subcontractor.

By: _____
(Signature)

_____ (Print Name)

_____ (Title)

_____ (Date)

NOTARY

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

My Commission Expires: _____ By _____

Print Name

Title



DAILY FIELD OBSERVATION REPORT

Project Number _____

Project Title _____

Contractor _____

Report Number _____ Date _____ Time _____

Weather

- Clear Snow
 Overcast Foggy
 Rain Cold

Site Conditions

- Warm Clear Dusty
 Hot Muddy _____
 Temperature Range _____

Day

- Monday Thursday
 Tuesday Friday
 Wednesday _____

Persons Contacted:

Work Observed:

Items Discussed:

Materials Delivered:

Requested Revisions or Interpretations:

Nonconforming Work Reported This Date To Contractor:

Remarks:

Attachments

Signed by: _____

Date: _____

- Distribution: Owner
 Contractor
 Construction Manager
 Design Professional
 Consultant _____
 Other _____



PERIODIC FIELD OBSERVATION REPORT

Project Number _____

Project Title _____

Contractor _____

Report Number _____ Date _____ Time _____

Weather

- Clear Snow
 Overcast Foggy
 Rain Cold

Site Conditions

- Warm Clear Dusty
 Hot Muddy _____
 Temperature Range _____

Day

- Monday Thursday
 Tuesday Friday
 Wednesday _____

Persons Contacted:

Work Observed:

Items Discussed:

Remarks:

Attachments

Signed by: _____

Date: _____

- Distribution: Owner
 Contractor
 Construction Manager
 Design Professional
 Consultant _____
 Other _____



WEEKLY REPORT OF WORKING DAYS

Project Number _____

Project Title _____

Contractor _____

Report Number _____ Week Ending: _____

DATE:	WORKING DAY	REMARKS		
TOTAL THIS WEEK	PREVIOUSLY	TOTAL TO DATE	WORKING DAYS IN CONTRACT	REMAINING OR OVERTIME

Signed by OWNER'S REPRESENTATIVE _____ Date: _____

Signed by CONTRACTOR _____ Date: _____

Distribution: OWNER CONTRACTOR Construction Manager Design Professional Consultant Other



TRANSMITTAL LETTER

Project Number _____

Project Title _____

TO: _____ Date _____
 _____ Re: _____

 ATTN: _____

- We are sending you Attached Under separate cover via _____ the following items:
 Shop Drawings Prints Drawings Samples Specifications
 Copy of Letter Change Order _____

Copies	Date	No.	Description

These are transmitted as checked below:

- For Approval Approved as Submitted Resubmit _____ Copies for Approval
 For Your Use Approved as Noted Submit _____ Copies for Distribution
 As Requested Returned for Corrections Return _____ Corrected Prints
 For Review and Comment _____

Remarks: _____

By: _____

- Distribution: Owner
 Contractor
 Construction Manager
 Design Professional
 Consultant
 Other



SUBSTITUTION REQUEST

Project Number _____

Project Title _____

To: _____ Authorization Number: _____
From: _____
Re: _____ Date: _____
Contract For: _____

Specification Title: _____
Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
Manufacturer: _____ Address: _____ Phone No. _____
Trade Name: _____ Model No. _____
Installer: _____ Address: _____ Phone No. _____
History: New Product 2-5 years old 5-10 years old More than 10 years old
Differences between proposed substitution and specified product: _____

Point-by-point comparative data attached – REQUIRED

Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance, service, and availability of replacement parts, as applicable, are available.
- Proposed substitution will not affect or delay Progress Schedule, except as stated below.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances, except as stated below.
- Payment will be made for changes to building design, including architectural or engineering design, detailing, licenses, royalties, and construction costs caused by the requested substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be completed in all respects.

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Design Professional: _____
Address: _____ Owner: _____
Date Installed: _____

Proposed substitution affects other parts of Work: No Yes; explain _____

Savings to Owner for accepting substitution: _____

Proposed substitution changes Contract Time: No Yes; add/deduct _____ days.

Supporting Data Attached:

Product Data Drawings Tests Reports Samples _____

Attachments: _____

Submitted by: _____

Signature: _____

Firm: _____

Address: _____

Telephone: _____ Fax: _____ E-Mail: _____

Additional Comments: Contractor Subcontractor Supplier Manufacturer DP _____

DESIGN PROFESSIONAL'S REVIEW AND ACTION

- Substitution approved – Make submittals in accordance with Specification Section 01300.
- Substitution approved as noted – Make submittals in accordance with Specification Section 01300.
- Substitution rejected – Use specified materials.
- Substitution Request received too late – Use specified materials.

Signed by: _____ Date: _____

- Distribution:
- Owner
 - Design Professional
 - Contractor
 - Consultant
 - Construction Manager
 - Other

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.
7. Miscellaneous provisions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

A. Project Identification: ADA Compliance Project
Project #07061111 – Bid Package #6

1. Project Location: A. Hillcrest Community Center
10401 Hillcrest Road

B. Kansas City North Community Center
3930 NE Antioch Road

C. Tony Aguirre Community Center
2050 West Pennway

D. Brush Creek Community Center
3801 Emanuel Cleaver II Boulevard

B. Owner: City of Kansas City

1. Owner's Representative: Jenny Harriman, Project Manager

C. Architect: Piper-Wind Architects, Inc.
2121 Central, Suite 143
Kansas City, MO 64108
816-474-3050

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. ADA accessibility compliance work includes both exterior and interior work related to: site civil, grading, asphalt and concrete paving, concrete ramps, interior general construction, interior concrete patch and repair work, misc. metals, minor masonry work, rough and finish carpentry, doors and door hardware, exterior metal stairs, ornamental railings and misc. metals, millwork, metal studs and drywall, acoustical ceilings, ceramic tile, finishes, miscellaneous hardware, bathroom accessories and toilet partitions, signage, minor mechanical, electrical, and plumbing and fixtures.

B. Type of Contract.

1. Project will be constructed under a single prime contract.

1.4 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

B. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

C. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

D. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.5 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used

facilities without written permission from Owner and approval of authorities having jurisdiction.

2. Notify Owner not less than 48 hours in advance of activities that will affect Owner's operations.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 1. Notify Architect, City & Parks Department not less than two days in advance of proposed utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 1. Notify Architect, City & Parks Department not less than two days in advance of proposed disruptive operations.
- E. Nonsmoking Building: Smoking is not permitted within the building or within 50 feet of entrances, operable windows, or outdoor-air intakes.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.8 MISCELLANEOUS PROVISIONS

- A. **All workers for this project are required to submit information for a background check, and obtain a City of Kansas City, Missouri contractor badge to be worn at all times on all sites.**

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012200 – UNIT PRICES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. List of unit prices, for use in changing specified quantities of work from those indicated by Contract Drawings and Specifications, upon written instructions of Owner, the following Unit Prices shall prevail in accordance with General Conditions.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
- C. Defect assessment and non-payment for rejected work.

1.2 COSTS INCLUDED

- A. The following Unit Prices include all labor, overhead and profit, materials, equipment, appliances, bailing, shoring, shoring removal, etc., to cover all work.

1.3 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.4 MEASUREMENT OF QUANTITIES

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Take all measurements and compute quantities. Measurements and quantities will be verified by Owner's Representative.
- C. Assist by providing necessary equipment, workers, and survey personnel as required.
- D. Measurement Devices:
 - 1. Weigh Scales: Inspected, tested and certified by the applicable state Weights and Measures department within the past year.

2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
 3. Metering Devices: Inspected, tested and certified by the applicable state department within the past year.
- E. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness. Material shall be measured and quantified in original position.
- F. Measurement by Area: Measured by square dimension using mean length and width or radius.
- G. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- H. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.
- I. Perform surveys required to determine quantities, including control surveys to establish measurement reference lines. Notify Owner's Representative prior to starting work.
- J. Contractor's Responsibilities: Sign surveyor's field notes or keep duplicate field notes. Calculate and certify quantities for payment purposes.

1.5 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by Owner's Representative multiplied by the unit price.
- B. Payment will not be made for any of the following:
1. Products wasted or disposed of in a manner that is not acceptable.
 2. Products determined as unacceptable before or after placement.
 3. Products not completely unloaded from the transporting vehicle.
 4. Products placed beyond the lines and levels of the required Work.
 5. Products remaining on hand after completion of the Work.
 6. Loading, hauling, and disposing of rejected Products.

1.6 UNIT PRICES

- A. Only a single Unit Price shall be given and it shall apply for either MORE or LESS work than that indicated on Drawings and called for in Specifications as indicated to be included in Base Bid and/or Alternates. In the event that more or less units than so indicated is actually

furnished, Change Orders will be issued for increased or decreased amounts as approved by the Owner.

- B. Contractor understands that the Owner will not be liable for any Unit Price or any amount in excess of Base Bid and any Alternate(s) accepted at time of award of Contract, except as expressed in written Change Orders duly executed and delivered by Owner's Representative.
- C. Excavation above the Subgrade is unclassified and shall be included in the base bid.
 - 1. Subgrade is defined as follows: Surface or elevation remaining after completion of excavation to the following depths.
 - a. Bottom of footings.
 - b. Bottom of bedding material in utility trenches and utility tunnels.
 - c. In pavement areas: bottom of subbase of the pavement as shown on the drawings.
 - d. In cut areas in lawns: bottom of topsoil.
 - e. In fill areas in lawns: 6" minimum below existing surface.
 - 2. Under no circumstance shall the Owner be responsible for rock removal above the subgrade, regardless of the elevation at which rock is encountered.
 - 3. Contractor shall provide unit prices for work below the subgrade as defined in the Schedule of Unit Prices under this section.
- D. Satisfactory soil materials and placement includes: satisfactory onsite materials and/or borrowed off-site satisfactory soil materials, backfill, fill, placement, grading and compaction as defined in, and required by, Division 31 Section "Earth Moving".

1.7 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of Owner's Representative, it is not practical to remove and replace the Work, Owner's Representative will direct one of the following remedies:
 - 1. The defective Work may remain, but the contract price will be adjusted to a new price at the discretion of Owner's Representative.
 - 2. The defective Work will be partially repaired to the instructions of the Owner's Representative, and the contract price will be adjusted to a new price at the discretion of Owner's Representative.
- C. The individual specification sections may modify these options or may identify a specific formula or percentage price reduction.

- D. The authority of Owner's Representative to assess the defect and identify payment adjustment is final.

1.8 SCHEDULE OF UNIT PRICES

A. FILL IN ONLY ONE PRICE PER LINE

1. For existing door closers that cannot be adjusted to comply with ADA regulations, provide a unit cost to remove the existing closer and provide a new closer on the door, adjusted to meet all ADA requirements.
 - a. \$ _____ / closer
2. Removal of unsuitable material below subgrade for site, proper disposal of unsuitable material, and replacement with satisfactory material when directed by the Geotechnical Engineer. NOTE: All excavation above subgrade is unclassified and shall be included in base bid.
 - a. \$ _____ / cu.yd.
3. Bulk rock excavation below exposed subgrade for building and site, proper disposal of excavated rock, and replacement with satisfactory material. NOTE: All excavation above subgrade is unclassified and shall be included in base bid.
 - a. \$ _____ / cu.yd.
4. Additional hot-mix asphaltic concrete pavement
 - a. \$ _____ /SY of 2-inch surface course APWA Type 3-01
 - b. \$ _____ /SY of 4-inch surface course APWA RC Type 1-01
5. Additional concrete pavement
 - a. \$ _____ /SY of 6-inch concrete pavement
6. Additional base course aggregate (MoDOT Types)
 - a. \$ _____ /SY of 4-inch base course (MoDOT Types) compacted per specification.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's

- letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 10 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provide.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.

- h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

- 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
- 2. Within 7 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

- a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
- b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
- c. Include costs of labor and supervision directly attributable to the change.
- d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

- B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

- 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
- 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.4 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices.
 - 2. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 3. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange schedule of values consistent with format of AIA Document G703.
 - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports.

4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Architect by the 25th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Schedule of unit prices.
 5. Submittal schedule (preliminary if not final).
 6. List of Contractor's staff assignments.
 7. List of Contractor's principal consultants.
 8. Copies of building permits.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Initial progress report.
 11. Report of preconstruction conference.
 12. Certificates of insurance and insurance policies.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.

2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707-1994, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Requests for Information (RFIs).
 - 2. Project meetings.

1.2 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's construction schedule.
 2. Preparation of the schedule of values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Project closeout activities.
 7. Startup and adjustment of systems.
- 1.5 REQUESTS FOR INFORMATION (RFIs)
- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.

- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow five working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within five days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within five days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.
- 1.6 PROJECT MEETINGS
- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: The Owner will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later 15 days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing and long-lead items.
 - c. Designation of key personnel and their duties.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for RFIs.
 - f. Procedures for testing and inspecting.
 - g. Procedures for processing Applications for Payment.
 - h. Distribution of the Contract Documents.
 - i. Submittal procedures.
 - j. Preparation of record documents.
 - k. Use of the premises and existing building.
 - l. Work restrictions.
 - m. Working hours.
 - n. Owner's occupancy requirements.
 - o. Responsibility for temporary facilities and controls.
 - p. Procedures for moisture and mold control.
 - q. Procedures for disruptions and shutdowns.
 - r. Construction waste management and recycling.
 - s. Parking availability.
 - t. Office, work, and storage areas.
 - u. Equipment deliveries and priorities.
 - v. First aid.
 - w. Security.
 - x. Progress cleaning.
 3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Progress Meetings: Conduct progress meetings at biweekly intervals.
1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these

- meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
 3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Construction schedule updating reports.
 - 3. Daily construction reports.
 - 4. Site condition reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

1.3 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file, where indicated.
 - 2. PDF electronic file.
- B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- C. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 - D. Construction Schedule Updating Reports: Submit with Applications for Payment.
 - E. Daily Construction Reports: Submit at monthly intervals.
 - F. Site Condition Reports: Submit at time of discovery of differing conditions.
- 1.4 COORDINATION
- A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 1. Secure time commitments for performing critical elements of the Work from entities involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of final completion.
 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
 6. Punch List and Final Completion: Include not more than 15 days for completion of punch list items and final completion.

- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 - 1. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Seasonal variations.
 - g. Environmental control.
 - 2. Work Stages: Indicate important stages of construction for each major portion of the Work.
 - D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
 - E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 - 1. Unresolved issues.
 - 2. Unanswered Requests for Information.
 - 3. Rejected or unreturned submittals.
 - 4. Notations on returned submittals.
 - 5. Pending modifications affecting the Work and Contract Time.
 - F. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.
 - G. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.
 - 1. Use Microsoft Project, for Windows 7 operating system.
- 2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)
- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within 15 days of the Notice to Proceed.
 - B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
- 2.3 REPORTS
- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Accidents.
 8. Meetings and significant decisions.
 9. Unusual events.
 10. Stoppages, delays, shortages, and losses.
 11. Emergency procedures.
 12. Orders and requests of authorities having jurisdiction.
 13. Change Orders received and implemented.
 14. Construction Change Directives received and implemented.
 15. Services connected and disconnected.
 16. Equipment or system tests and startups.
 17. Partial completions and occupancies.
 18. Substantial Completions authorized.
- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

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

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion photographs.

1.2 INFORMATIONAL SUBMITTALS

A. Digital Photographs: Submit unaltered, original, full-size image files within three days of taking photographs.

1. Digital Camera: Minimum sensor resolution of 8 megapixels.
2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Date photograph was taken.
 - c. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.3 USAGE RIGHTS

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

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

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

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

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

- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- C. Preconstruction Photographs: Before commencement of demolition or starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
- D. Periodic Construction Photographs: Take photographs weekly, with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- E. **Final Completion Construction Photographs: Take color photographs after date of Substantial Completion for submission as Project Record Documents to verify that work has been completed per all requirements of the 2010 ADA Standards for Accessible Design.**

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will **not** be provided by Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the

Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 7 days for review of each resubmittal.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name of Contractor.
 - e. Name of firm or entity that prepared submittal.
 - f. Names of subcontractor, manufacturer, and supplier.
 - g. Category and type of submittal.
 - h. Submittal purpose and description.
 - i. Specification Section number and title.
 - j. Related physical samples submitted directly.
 - k. Indication of full or partial submittal.
 - l. Transmittal number, numbered consecutively.
 - m. Submittal and transmittal distribution record.
 - n. Other necessary identification.
 - o. Remarks.
- E. Options: Identify options requiring selection by Architect.
- F. Deviations: Identify deviations from the Contract Documents on submittals.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.

2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements:
1. Post electronic submittals as PDF electronic files directly to Project Web site specifically established for Project (DAX System under this Bid Package on the Construction Dashboard of the MySmartPlans website) .
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - b. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 3. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.

- d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 4. Submit Product Data before or concurrent with Samples.
 5. Submit Product Data in the following format:
 - a. PDF electronic file.
 - C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 11 by 17 inches.
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
 - D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the

following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.
- E. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- F. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. **Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.**

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:
 1. Approved
 2. Approved as Corrected
 3. Revise and Resubmit
 4. Rejected
- C. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- D. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

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

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
3. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.2 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner

that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location of underground utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish limits on use of Project site.
 - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

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

3.8 PROTECTION OF INSTALLED CONSTRUCTION

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

END OF SECTION 017300

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
- B. Related Requirements:
 - 1. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit record digital data files.
 - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit PDF electronic files.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up set of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data,

whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

- a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it.
 - c. Record and check the markup before enclosing concealed installations.
2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 3. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Annotated PDF electronic file with comment function enabled.
 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 3. Refer instances of uncertainty to Architect for resolution.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. Note related Change Orders where applicable.
- B. Format: Submit record Specifications as annotated PDF electronic file.

2.3 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

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

END OF SECTION 017839

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

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

1.2 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 INFORMATIONAL SUBMITTALS

A. Schedule of selective demolition activities with starting and ending dates for each activity.

B. Pre-demolition photographs or video.

1.4 FIELD CONDITIONS

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

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

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

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.
- G. Arrange selective demolition schedule so as not to interfere with Owner's operations.

1.5 WARRANTY

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

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
- C. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off utilities with utility companies.
 - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION

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

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 4. Maintain fire watch during and for at least four hours after flame-cutting operations.
 5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 6. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items: To the greatest extent possible, Contractor to save removed items, and donate and deliver to a retail reuse center through Planet Reuse or other entity.
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to reuse center.
 4. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- 3.6 CLEANING
- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Slabs-on-grade.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Provide documentation to indicate that no shale aggregate is to be used for exterior or interior flatwork concrete prior to mixing the batch(s) of concrete.
 - 2. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. Welding certificates.
- E. Qualification Data: For manufacturer.
- F. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates.
- G. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.

3. Form materials and form-release agents.
 4. Steel reinforcement and accessories.
 5. Curing compounds.
 6. Floor and slab treatments.
 7. Bonding agents.
 8. Adhesives.
 9. Semirigid joint filler.
 10. Joint-filler strips.
 11. Repair materials.
- H. Floor surface flatness and levelness measurements to determine compliance with specified tolerances.
- I. Field quality-control test and inspection] reports.
- J. Minutes of preinstallation conference.
- 1.5 QUALITY ASSURANCE
- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
- E. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."
- F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
1. ACI 301, "Specification for Structural Concrete"
 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

- G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- H. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."
 - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete subcontractor.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.
 - 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 - 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
 - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
 - a. High-density overlay, Class 1 or better.
 - b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
 - c. Structural 1, B-B or better; mill oiled and edge sealed.
 - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.

- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.
- D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
- B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars, cut bars true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
 - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
 - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
 - 3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

2.5 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type I, gray. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class C. 15% of cementitious material weight
- B. Silica Fume: ASTM C 1240, amorphous silica.
- C. Shale Aggregates: There shall be no shale aggregate used in the exterior or interior flatwork concrete. Provide proper documentation to indicate no shale aggregate will be included in the flatwork mix.
- D. Normal-Weight Aggregates: ASTM C 33, Class 3S] coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials].
 - 1. Maximum Coarse-Aggregate Size 3/4 inch @ 4" slabs, 1 inch @ 5" slabs (19 mm)] nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- E. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.7 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
 - 1. Products:
 - a. Axim Concrete Technologies; Cimfilm.
 - b. Burke by Edoco; BurkeFilm.

- c. ChemMasters; Spray-Film.
 - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Aquafilm.
 - e. Dayton Superior Corporation; Sure Film.
 - f. Euclid Chemical Company (The); Eucobar.
 - g. Kaufman Products, Inc.; Vapor Aid.
 - h. Lambert Corporation; Lambco Skin.
 - i. L&M Construction Chemicals, Inc.; E-Con.
 - j. MBT Protection and Repair, Div. of ChemRex; Confilm.
 - k. Meadows, W. R., Inc.; Sealtight Evapre.
 - l. Metalcrete Industries; Waterhold.
 - m. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
 - n. Sika Corporation, Inc.; SikaFilm.
 - o. Symons Corporation, a Dayton Superior Company; Finishing Aid.
 - p. Unitex; Pro-Film.
 - q. US Mix Products Company; US Spec Monofilm ER.
 - r. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- 1. Products:
 - a. Anti-Hydro International, Inc.; AH Curing Compound #2 DR WB.
 - b. Burke by Edoco; Aqua Resin Cure.
 - c. ChemMasters; Safe-Cure Clear.
 - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; W.B. Resin Cure.
 - e. Dayton Superior Corporation; Day Chem Rez Cure (J-11-W).
 - f. Euclid Chemical Company (The); Kurez DR VOX.
 - g. Kaufman Products, Inc.; Thinfilm 420.
 - h. Lambert Corporation; Aqua Kure-Clear.
 - i. L&M Construction Chemicals, Inc.; L&M Cure R.
 - j. Meadows, W. R., Inc.; 1100 Clear.
 - k. Nox-Crete Products Group, Kinsman Corporation; Resin Cure E.
 - l. Symons Corporation, a Dayton Superior Company; Resi-Chem Clear Cure.
 - m. Tamms Industries, Inc.; Horncure WB 30.
 - n. Unitex; Hydro Cure 309.
 - o. US Mix Products Company; US Spec Maxcure Resin Clear.
 - p. Vexcon Chemicals, Inc.; Certi-Vex EnvioCure 100.

2.8 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1752, cork or self-expanding cork].

- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80] per ASTM D 2240.
- C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Reglets: Fabricate reglets of not less than 0.0217-inch- (0.55-mm-) thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.
- E. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch (0.85 mm) thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.9 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Fly Ash: 15 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
 - 4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
- E. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.10 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: 4000 psi (27.6 MPa)] at 28 days.
 - 2. Minimum Cementitious Materials Content: 500 pounds.
 - 3. Slump Limit: 4 inches (100 mm)] plus or minus 1 inch (25 mm).
 - 4. Water Cement Ratio = 0.45.

2.11 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M], and furnish batch ticket information.
 - 1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
 - 1. Class A, 1/8 inch (3.2 mm)] for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
 - 1. Install keyways, reglets, recesses, and the like, for easy removal.
 - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer] exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
 - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
 - 3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24] hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
 - 1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved its 28-day design compressive strength.
 - 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
 - 1. Weld reinforcing bars according to AWS D1.4, where indicated.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.
- F. Epoxy-Coated Reinforcement: Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963/D 3963M. Use epoxy-coated steel wire ties to fasten epoxy-coated steel reinforcement.

3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
 - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
 - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
 - 5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
 - 6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 - 7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 - 8. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
- C. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
 - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
 - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
 - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Maintain reinforcement in position on chairs during concrete placement.
 - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 - 4. Slope surfaces uniformly to drains where required.
 - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces exposed to public view.

- C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
 - 1. Apply float finish to surfaces to receive trowel finish.
- C. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
 - 2. Finish surfaces to the following tolerances, according to ASTM E 1155 (ASTM E 1155M), for a randomly trafficked floor surface:
 - a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15.
 - b. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade.
 - c. Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs.
 - d. Specified overall values of flatness, F(F) 45; and of levelness, F(L) 35; with minimum local values of flatness, F(F) 30; and of levelness, F(L) 24.
 - 3. Finish and measure surface so gap at any point between concrete surface and an unveled, freestanding, 10-foot- (3.05-m-) long straightedge resting on 2 high spots and placed anywhere on the surface does not exceed 1/8 inch.
- D. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.
 - 1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.
- E. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.
- F. Dry-Shake Floor Hardener Finish: After initial floating, apply dry-shake floor hardener to surfaces according to manufacturer's written instructions and as follows:
1. Uniformly apply dry-shake floor hardener at a rate of 100 lb/100 sq. ft. unless greater amount is recommended by manufacturer.
 2. Uniformly distribute approximately two-thirds of dry-shake floor hardener over surface by hand or with mechanical spreader, and embed by power floating. Follow power floating with a second dry-shake floor hardener application, uniformly distributing remainder of material, and embed by power floating.
 3. After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake floor hardener manufacturer and apply immediately after final finishing.

3.9 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.
- D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.10 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project..
 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project].
 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.11 LIQUID FLOOR TREATMENTS

- A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.
1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
 2. Do not apply to concrete that is less than three] days' old.

3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

B. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions.

3.12 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least one] six] month(s). Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.13 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension in solid concrete, but not less than 1 inch (25 mm) in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.14 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a special inspector] and] qualified testing and inspecting agency] to perform field tests and inspections and prepare test reports.

B. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

C. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.

7. Verification of concrete strength before removal of shores and forms from beams and slabs.
- D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
 2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
 6. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 7. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
 - b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.
 8. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
 9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
 10. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).

11. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
 12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
 13. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
 14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- E. Measure floor and slab flatness and levelness according to ASTM E 1155 (ASTM E 1155M) within 48] hours of finishing.

END OF SECTION 033000

SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Concrete masonry units.
 - 2. Mortar and grout.
 - 3. Steel reinforcing bars.
 - 4. Masonry joint reinforcement.
 - 5. Embedded flashing.
 - 6. Miscellaneous masonry accessories.

1.3 DEFINITIONS

- A. CMU(s): Concrete masonry unit(s).
- B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 PERFORMANCE REQUIREMENTS

- A. Provide structural unit masonry that develops indicated net-area compressive strengths at 28 days.
 - 1. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

1.5 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.
 - 1. Concrete Masonry Unit Test: For each type of unit required, according to ASTM C 140 for compressive strength.
 - 2. Grout Test (Compressive Strength): For each mix required, according to ASTM C 1019.

1.6 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For the following:
 - 1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
 - 2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.
 - 3. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.
- C. Qualification Data: For testing agency.
- D. Material Certificates: For each type and size of the following:
 - 1. Masonry units.
 - a. Include material test reports substantiating compliance with requirements.
 - b. For masonry units, include data and calculations establishing average net-area compressive strength of units.
 - 2. Cementitious materials. Include brand, type, and name of manufacturer.
 - 3. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
 - 4. Grout mixes. Include description of type and proportions of ingredients.
 - 5. Reinforcing bars.
 - 6. Joint reinforcement.
 - 7. Anchors, ties, and metal accessories.
- E. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
 - 1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109/C 109M for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
 - 2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.
- F. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
- G. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.7 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.

- B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.
- D. Masonry Standard: Comply with ACI 530.1/ASCE 6/TMS 602 unless modified by requirements in the Contract Documents.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for use with dispensing silos. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.9 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches (600 mm) down both sides of walls and hold cover securely in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 2. Protect sills, ledges, and projections from mortar droppings.
 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than 7 days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects will be exposed in the completed Work.
- B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

2.2 CONCRETE MASONRY UNITS

- A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.
1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
 2. Provide square-edged or bullnose units to match existing for outside corners unless otherwise indicated.
- B. Integral Water Repellent: Provide units made with integral water repellent for exposed units.
1. Integral Water Repellent: Liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested

according to ASTM E 514 as a wall assembly made with mortar containing integral water-repellent manufacturer's mortar additive, with test period extended to 24 hours, shall show no visible water or leaks on the back of test specimen.

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

- 1) ACM Chemistries, Inc.; RainBloc.
- 2) BASF Aktiengesellschaft; Rheopel Plus.
- 3) Grace Construction Products, W. R. Grace & Co. - Conn.; Dry-Block.

C. CMUs: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2150 psi.
2. Density Classification: Normal weight
3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
4. Exposed Faces: Provide color and texture matching the range represented by Architect's sample.
5. Faces to Receive Plaster: Where units are indicated to receive a direct application of plaster, provide textured-face units made with gap-graded aggregates.

2.3 MASONRY LINTELS

A. General: Provide the following:

B. Masonry Lintels: Built-in-place masonry lintels made from bond beam CMUs with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.4 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207, Type S.

C. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.

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

- a. Davis Colors; True Tone Mortar Colors.
- b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
- c. Solomon Colors, Inc.; SGS Mortar Colors.

- D. Aggregate for Mortar: ASTM C 144.
1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
 2. For joints less than 1/4 inch (6 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.
 3. White-Mortar Aggregates: Natural white sand or crushed white stone.
 4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- E. Aggregate for Grout: ASTM C 404.
- F. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Euclid Chemical Company (The); Accelguard 80.
 - b. Grace Construction Products, W. R. Grace & Co. - Conn.; Morset.
 - c. Sonneborn Products, BASF Aktiengesellschaft; Trimix-NCA.
- G. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs, containing integral water repellent by same manufacturer.
1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ACM Chemistries, Inc.; RainBloc for Mortar.
 - b. BASF Aktiengesellschaft; Rheopel Mortar Admixture.
 - c. Grace Construction Products, W. R. Grace & Co. - Conn.; Dry-Block Mortar Admixture.
- H. Water: Potable.

2.5 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60 (Grade 420).
- B. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.
1. Interior Walls: Hot-dip galvanized, carbon steel.
 2. Exterior Walls: Hot-dip galvanized, carbon steel.
 3. Wire Size for Side Rods: 0.148-inch (3.77-mm).
 4. Wire Size for Cross Rods: 0.148-inch (3.77-mm).
 5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches (407 mm) o.c.
 6. Provide in lengths of not less than 10 feet (3 m), with prefabricated corner and tee units.

- C. Masonry Joint Reinforcement for Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.

2.6 TIES AND ANCHORS

- A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.
 - 1. Mill-Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M; with ASTM A 641/A 641M, Class 1 coating.
 - 2. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M; with ASTM A 153/A 153M, Class B-2 coating.
 - 3. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304.
 - 4. Galvanized Steel Sheet: ASTM A 653/A 653M, Commercial Steel, G60 (Z180) zinc coating.
 - 5. Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, with ASTM A 153/A 153M, Class B coating.
 - 6. Stainless-Steel Sheet: ASTM A 666, Type 304.
 - 7. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
 - 8. Stainless-Steel Bars: ASTM A 276 or ASTM A 666, Type 304.

2.7 MISCELLANEOUS ANCHORS

- A. Anchor Bolts: L-shaped steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153/A 153M, Class C; of dimensions indicated.
- B. Postinstalled Anchors: Torque-controlled expansion anchors.
 - 1. Load Capacity: Capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
 - 2. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5 unless otherwise indicated.
 - 3. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy **Group 1 (A1)** stainless-steel bolts, ASTM F 593 (ASTM F 738M), and nuts, ASTM F 594 (ASTM F 836M).

2.8 EMBEDDED FLASHING MATERIALS

- A. Flexible Flashing: Use one of the following unless otherwise indicated:
 - 1. Copper-Laminated Flashing: 5-oz./sq. ft. copper sheet bonded between 2 layers of glass-fiber cloth. Use only where flashing is fully concealed in masonry.

- a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Advanced Building Products Inc.; Copper Fabric Flashing.
 - 2) Dayton Superior Corporation, Dur-O-Wal Division; Copper Fabric Thru-Wall Flashing.
 - 3) Hohmann & Barnard, Inc.; H & B C-Fab Flashing.
 - 4) Phoenix Building Products; Type FCC-Fabric Covered Copper.
 - 5) Sandell Manufacturing Co., Inc.; Copper Fabric Flashing.
 - 6) York Manufacturing, Inc.; Multi-Flash 500.
 2. Asphalt-Coated Copper Flashing: 5-oz./sq. ft. copper sheet coated with flexible asphalt. Use only where flashing is fully concealed in masonry.
 - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Advanced Building Products Inc.; Cop-R-Cote.
 - 2) Dayton Superior Corporation, Dur-O-Wal Division; Copper Coated Thru-Wall Flashing.
 - 3) Hohmann & Barnard, Inc.; H & B C-Coat Flashing.
 - 4) Phoenix Building Products; Type ACC-Asphalt Bituminous Coated.
 - 5) Sandell Manufacturing Co., Inc.; Coated Copper Flashing.
 3. EPDM Flashing: Sheet flashing product made from ethylene-propylene-diene terpolymer, complying with ASTM D 4637, 0.040 inch (1.0 mm) thick.
 - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Carlisle Coatings & Waterproofing; Pre-Kleened EPDM Thru-Wall Flashing.
 - 2) Firestone Specialty Products; FlashGuard.
 - 3) Heckmann Building Products Inc.; No. 81 EPDM Thru-Wall Flashing.
 - 4) Hohmann & Barnard, Inc.; Epra-Max EPDM Thru-Wall Flashing.
 - 5) Sandell Manufacturing Co., Inc.; EPDM Flashing.
- B. Application: Unless otherwise indicated, use the following:
1. Where flashing is indicated to receive counterflashing, use metal flashing.
 2. Where flashing is indicated to be turned down at or beyond the wall face, use metal flashing.
 3. Where flashing is partly exposed and is indicated to terminate at the wall face, use metal flashing with a drip edge or flexible flashing with a metal drip edge.
 4. Where flashing is fully concealed, use metal flashing or flexible flashing.
- C. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.

2.9 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from [neoprene] [urethane] [or] [PVC].
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 or PVC, complying with ASTM D 2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and hold reinforcing bars in center of cells. Units are formed from 0.148-inch (3.77-mm) steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Dayton Superior Corporation, Dur-O-Wal Division; D/A 810, D/A 812 or D/A 817.
 - b. Heckmann Building Products Inc.; No. 376 Rebar Positioner.
 - c. Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.
 - d. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.

2.10 MASONRY-CELL INSULATION

- A. Loose-Granular Fill Insulation: Perlite complying with ASTM C 549, Type II (surface treated for water repellency and limited moisture absorption) or Type IV (surface treated for water repellency and to limit dust generation).

2.11 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Use portland cement-lime or mortar cement mortar unless otherwise indicated.
 - 3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

- C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.
1. For masonry below grade or in contact with earth, use Type S.
 2. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
- D. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required to match existing. Do not add pigments to colored cement products.
1. Pigments shall not exceed 10 percent of portland cement by weight.
 2. Mix to match Architect's sample.
 3. Application: Use pigmented mortar for exposed mortar joints with the following units:
 - a. Decorative CMUs.
 - b. Pre-faced CMUs.
 - c. Concrete facing brick.
 - d. Cast stone trim units.
- E. Grout for Unit Masonry: Comply with ASTM C 476.
1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 2. Proportion grout in accordance with ASTM C 476, Table 1
 3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
 2. Verify that foundations are within tolerances specified.
 3. Verify that reinforcing dowels are properly placed.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Build chases and recesses to accommodate items specified in this and other Sections.
- B. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- C. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:

- 1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch (12 mm) or minus 1/4 inch (6 mm).
- 2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch (12 mm).
- 3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch (6 mm) in a story height or 1/2 inch (12 mm) total.

B. Lines and Levels:

- 1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2 inch (12 mm) maximum.
- 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
- 3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2 inch (12 mm) maximum.
- 4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
- 5. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2 inch (12 mm) maximum.
- 6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2 inch (12 mm) maximum.

C. Joints:

- 1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).
- 2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
- 3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).
- 4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm).

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 4-inches (100-mm). Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- D. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- G. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.
- H. Fill cores in hollow CMUs with grout 24 inches (600 mm) under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.
- I. Build non-load-bearing interior partitions full height of story to underside of solid floor or roof structure above unless otherwise indicated.
 - 1. Install compressible filler in joint between top of partition and underside of structure above.
 - 2. Fasten partition top anchors to structure above and build into top of partition. Grout cells of CMUs solidly around plastic tubes of anchors and push tubes down into grout to provide 1/2-inch (13-mm) clearance between end of anchor rod and end of tube. Space anchors 48 inches (1200 mm)o.c. unless otherwise indicated.
 - 3. At fire-rated partitions, treat joint between top of partition and underside of structure above to comply with Division 07 Section "Fire-Resistive Joint Systems."

3.5 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMUs as follows:
 - 1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 - 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 - 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.

4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Set cast-stone trim units in full bed of mortar with full vertical joints. Fill dowel, anchor, and similar holes.
 1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
 2. Allow cleaned surfaces to dry before setting.
 3. Wet joint surfaces thoroughly before applying mortar.
- D. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
- E. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint) unless otherwise indicated.

3.6 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).
 1. Space reinforcement not more than 16 inches (406 mm) o.c.
 2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
 3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings in addition to continuous reinforcement.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.
- E. Cut and bend reinforcing units as directed by manufacturer for continuity at [**corners,**] returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete where masonry abuts or faces structural steel or concrete to comply with the following:

1. Provide an open space not less than 1/2 inch wide between masonry and structural steel or concrete unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24 inches (610 mm) o.c. vertically and 36 inches (915 mm) o.c. horizontally.

3.8 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry using one of the following methods:
 1. Fit bond-breaker strips into hollow contour in ends of CMUs on one side of control joint. Fill resultant core with grout and rake out joints in exposed faces for application of sealant.
 2. Install preformed control-joint gaskets designed to fit standard sash block.
 3. Install interlocking units designed for control joints. Install bond-breaker strips at joint. Keep head joints free and clear of mortar or rake out joint for application of sealant.
 4. Install temporary foam-plastic filler in head joints and remove filler when unit masonry is complete for application of sealant.

3.9 LINTELS

- A. Provide masonry lintels where shown and where openings of more than 12 inches (305 mm) for brick-size units and 24 inches (610 mm) for block-size units are shown without structural steel or other supporting lintels.
- B. Provide minimum bearing of 8 inches (200 mm) at each jamb unless otherwise indicated.

3.10 FLASHING

- A. General: Install embedded flashing in masonry at lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
 2. At lintels, extend flashing a minimum of 6 inches (150 mm) into masonry at each end. At heads and sills, extend flashing 6 inches (150 mm) at ends and turn up not less than 2 inches (50 mm) to form end dams.

3. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches (38 mm) or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
 4. Install metal drip edges with ribbed sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant complying with requirements in Division 07 Section "Joint Sealants" for application indicated.
 5. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall and adhere flexible flashing to top of metal drip edge.
 6. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall and adhere flexible flashing to top of metal flashing termination.
 7. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.
- C. Install single-wythe CMU flashing system in bed joints of CMU walls where indicated to comply with manufacturer's written instructions. Install CMU cell pans with upturned edges located below face shells and webs of CMUs above and with weep spouts aligned with face of wall. Install CMU web covers so that they cover upturned edges of CMU cell pans at CMU webs and extend from face shell to face shell.
- D. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.

3.11 REINFORCED UNIT MASONRY INSTALLATION

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
 2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other loads that may be placed on them during construction.
- B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
- C. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.
 2. Limit height of vertical grout pours to not more than 60 inches.

3.12 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to meet specified requirements shall be done at Contractor's expense.
- B. Inspections: Level 2 special inspections according to the "International Building Code."
 - 1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
 - 2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
 - 3. Place grout only after inspectors have verified proportions of site-prepared grout.
- C. Testing Prior to Construction: One set of tests.
- D. Testing Frequency: One set of tests for each 5000 sq. ft. (464 sq. m) of wall area or portion thereof.
- E. Concrete Masonry Unit Test: For each type of unit provided, according to ASTM C 140 for compressive strength.
- F. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C 780.
- G. Grout Test (Compressive Strength): For each mix provided, according to ASTM C 1019.

3.13 PARGING

- A. Parge exterior faces of below-grade masonry walls, where indicated, in 2 uniform coats to a total thickness of 3/4 inch (19 mm). Dampen wall before applying first coat and scarify first coat to ensure full bond to subsequent coat.
- B. Use a steel-trowel finish to produce a smooth, flat, dense surface with a maximum surface variation of 1/8 inch per foot (3 mm per 300 mm). Form a wash at top of parging and a cove at bottom.
- C. Damp-cure parging for at least 24 hours and protect parging until cured.

3.14 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent

construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 - 5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.15 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
 - 1. Crush masonry waste to less than 4 inches (100 mm) in each dimension.
 - 2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Division 31 Section "Earth Moving."
 - 3. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.
- C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 042200

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Structural steel.
 - 2. Grout.

1.3 DEFINITIONS

- A. Structural Steel: Elements of structural-steel frame, as classified by AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

1.4 PERFORMANCE REQUIREMENTS

- A. Connections: Provide details of connections required by the Contract Documents to be selected or completed by structural-steel fabricator to withstand loads indicated in the structural general notes.
 - 1. Select and complete connections using AISC 360.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication of structural-steel components.
 - 1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
 - 2. Include embedment drawings.
 - 3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
 - 4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.

- C. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for each welded joint whether prequalified or qualified by testing, including the following:
 - 1. Power source (constant current or constant voltage).
 - 2. Electrode manufacturer and trade name, for demand critical welds.
- D. Qualification Data: For qualified Installer, fabricator, professional engineer and testing agency.
- E. Welding certificates.
- F. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.
- G. Mill test reports for structural steel, including chemical and physical properties.
- H. Product Test Reports: For the following:
 - 1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
 - 2. Direct-tension indicators.
 - 3. Tension-control, high-strength bolt-nut-washer assemblies.
 - 4. Shear stud connectors.
 - 5. Shop primers.
 - 6. Nonshrink grout.
- I. Source quality-control reports.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD.
- B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category CSE.
- C. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement P2 or SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."
- D. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 - 1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.
- E. Comply with applicable provisions of the following specifications and documents:

1. AISC 303.
2. AISC 341 and AISC 341s1.
3. AISC 360.
4. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

F. Preinstallation Conference: Conduct conference at Project site.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
2. Clean and relubricate bolts and nuts that become dry or rusty before use.
3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

1.8 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

- A. W-Shapes: ASTM A 992/A 992M.
- B. Channels, Angles, M , S-Shapes: ASTM A 36/A 36M.
- C. Plate and Bar: ASTM A 36/A 36M.
- D. Corrosion-Resisting Structural-Steel Shapes, Plates, and Bars: ASTM A 588/A 588M, Grade 50 (345).

- E. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.
- F. Corrosion-Resisting Cold-Formed Hollow Structural Sections: ASTM A 847/A 847M, structural tubing.
- G. Steel Castings: ASTM A 216/A 216M, Grade WCB with supplementary requirement S11.
- H. Steel Forgings: ASTM A 668/A 668M.
- I. Welding Electrodes: Comply with AWS requirements.

2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, (ASTM A 563M, Class 8S) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M), Type 1, hardened carbon-steel washers; all with plain finish.
 - 1. Direct-Tension Indicators: ASTM F 959, Type 325 (ASTM F 959M, Type 8.8), compressible-washer type with plain finish.
- B. Shear Connectors: ASTM A 108, Grades 1015 through 1020, headed-stud type, cold-finished carbon steel; AWS D1.1/D1.1M, Type B.
- C. Unheaded Anchor Rods: ASTM F 1554, Grade 36.
 - 1. Configuration: Hooked.
 - 2. Nuts: ASTM A 563 (ASTM A 563M) hex carbon steel.
 - 3. Plate Washers: ASTM A 36/A 36M carbon steel.
 - 4. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened carbon steel.
 - 5. Finish: Plain.
- D. Threaded Rods: ASTM A 36/A 36M.
 - 1. Nuts: ASTM A 563 (ASTM A 563M) heavy-hex carbon steel.
 - 2. Washers: ASTM F 436 (ASTM F 436M), carbon steel.
 - 3. Finish: Plain.
- E. Sleeve Nuts: Made from cold-finished carbon steel bars, ASTM A 108, Grade 1018.

2.3 PRIMER

- A. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.
- B. Galvanizing Repair Paint: ASTM A 780.

2.4 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.5 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC 360.
 - 1. Camber structural-steel members where indicated.
 - 2. Fabricate beams with rolling camber up.
 - 3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
 - 4. Mark and match-mark materials for field assembly.
 - 5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
 - 1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.
- C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
- E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 1, "Solvent Cleaning."
- F. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel framing members.
 - 1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
 - 2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
 - 3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.6 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
 - 1. Joint Type: Pretensioned.

- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

- 1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

2.7 SHOP PRIMING

- A. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

- 1. SSPC-SP 2, "Hand Tool Cleaning."

- B. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils (0.038 mm). Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

- C. Painting: Prepare steel and apply a one-coat, nonasphaltic primer complying with SSPC-PS Guide 7.00, "Painting System Guide 7.00: Guide for Selecting One-Coat Shop Painting Systems," to provide a dry film thickness of not less than 1.5 mils (0.038 mm).

2.8 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.

- 1. Fill vent and drain holes that will be exposed in the finished Work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.
 - 2. Galvanize lintels, shelf angles attached to structural-steel frame and located in exterior walls.
 - 3. Galvanize all exposed steel.

2.9 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.

- 1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

- B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

- C. Bolted Connections: Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify, with steel Erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
 - 1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.
 - 1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.
- B. Base Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
 - 1. Set plates for structural members on wedges, shims, or setting nuts as required.
 - 2. Weld plate washers to top of baseplate.
 - 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
 - 4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

- D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of structure.
 - 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Do not use thermal cutting during erection.
- G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.
- H. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.

3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
 - 1. Joint Type: Pretensioned.
- B. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
 - 1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
 - 2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.
 - 3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.
- B. Bolted Connections: Bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- C. Welded Connections: Field welds will be visually inspected according to AWS D1.1/D1.1M.

- D. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

3.6 REPAIRS AND PROTECTION

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.
- B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - 1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
- C. Touchup Painting: Cleaning and touchup painting are specified in Division 09 painting Sections.

END OF SECTION 051200

SECTION 055119 - METAL GRATING STAIRS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes replacement of industrial-type, steel-grating treads attached to metal stairs.

1.2 ACTION SUBMITTALS

- A. Product Data: For ADA compliant metal grating treads with integral solid risers.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance of Stairs: Metal stairs shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Uniform Load: 100 lbf/sq. ft.
 - 2. Concentrated Load: 300 lbf applied on an area of 4 sq. in.
 - 3. Uniform and concentrated loads need not be assumed to act concurrently.
 - 4. Stair Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above.

2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- D. Steel Bars for Grating Treads: ASTM A 36/A 36M or steel strip, ASTM A 1011/A 1011M or ASTM A 1018/A 1018M.
- E. Wire Rod for Grating Crossbars: ASTM A 510 (ASTM A 510M).

2.3 FASTENERS

- A. Provide zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 12 for exterior use, and Class Fe/Zn 5 where built into exterior walls. Select fasteners for type, grade, and class required.

2.4 MISCELLANEOUS MATERIALS

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

2.5 FABRICATION, GENERAL

- A. Provide complete stair tread and riser assemblies, including, hangers, clips, brackets, bearing plates, and other components necessary to support and anchor stair treads and risers on the structure.
 - 1. Join components by welding unless otherwise indicated.
 - 2. Use connections that maintain structural value of joined pieces.
- B. Weld connections to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. Weld exposed corners and seams continuously unless otherwise indicated.
 - 5. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 4 welds: good quality, uniform undressed weld with minimal splatter.
- C. Fabricate joints that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

2.6 STEEL-FRAMED STAIRS

- A. NAAMM Stair Standard: Comply with "Recommended Voluntary Minimum Standards for Fixed Metal Stairs" in NAAMM AMP 510, "Metal Stairs Manual," Industrial Class, unless more stringent requirements are indicated.
- B. Metal Bar-Grating Stairs: Form treads and platforms to configurations shown from metal bar grating; fabricate to comply with NAAMM MBG 531, "Metal Bar Grating Manual."
 - 1. Fabricate treads and platforms from welded steel grating with openings in gratings no more than 1/2 inch in least dimension.
 - 2. Treads to have integral solid risers.
 - 3. Surface: Plain.
 - 4. Finish: Galvanized.

5. Fabricate grating treads with rolled-steel floor plate nosing and with steel angle or steel plate carrier at each end for stringer connections. Secure treads to stringers with bolts.

2.7 FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Remove existing grating treads. Replace with new grating treads with integral solid risers.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal stair treads and risers. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.
- C. Field Welding: Comply with requirements for welding in "Fabrication, General" Article.

3.2 ADJUSTING AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

END OF SECTION 055119

SECTION 055213 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Steel pipe and tube railings.
2. Stainless-steel pipe and tube railings.

B. Related Requirements:

1. Section 055112 "Metal Pan Stairs" for steel tube railings associated with metal pan stairs.

1.2 ACTION SUBMITTALS

A. Product Data: For the following:

1. Manufacturer's product lines of mechanically connected railings.
2. Railing brackets.
3. Grout, anchoring cement, and paint products.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

C. Samples: For each type of exposed finish required.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails and Top Rails of Guards:

- a. Uniform load of 50 lbf/ ft. applied in any direction.
- b. Concentrated load of 200 lbf applied in any direction.
- c. Uniform and concentrated loads need not be assumed to act concurrently.

2. Infill of Guards:

- a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
- b. Infill load and other loads need not be assumed to act concurrently.

2.2 METALS, GENERAL

- A. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.
 - 1. Provide type of bracket with flange tapped for concealed anchorage to threaded hanger bolt and that provides 1-1/2-inch clearance from inside face of handrail to finished wall surface.

2.3 STEEL AND IRON

- A. Tubing: ASTM A 500 (cold formed) or ASTM A 513.
- B. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.
 - 1. Provide galvanized finish for exterior installations and where indicated.
- C. Plates, Shapes, and Bars: ASTM A 36/A 36M.
- D. Cast Iron: Either gray iron, ASTM A 48/A 48M, or malleable iron, ASTM A 47/A 47M, unless otherwise indicated.

2.4 STAINLESS STEEL

- A. Tubing: ASTM A 554, Grade MT 304 at interior locations and Grade MT 316L at exterior locations.
- B. Castings: ASTM A 743/A 743M, Grade CF 8 or CF 20 for type 304 and Grade CF 8M or CF 3M for type 316.
- C. Plate and Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304 at interior locations and Type 316L at exterior locations.

2.5 FASTENERS

- A. General: Provide the following:
 - 1. Ungalvanized-Steel Railings: Plated steel fasteners complying with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5 for zinc coating.
 - 2. Hot-Dip Galvanized Railings: Type 304 stainless-steel or hot-dip zinc-coated steel fasteners complying with ASTM A 153/A 153M or ASTM F 2329 for zinc coating.
 - 3. Stainless-Steel Railings: Type 304 stainless-steel fasteners.
- B. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors capable of sustaining, without failure, a load equal to 6 times the load imposed when installed in unit masonry and 4 times the load imposed when installed in concrete, as determined by testing according to ASTM E 488/E 488M, conducted by a qualified independent testing agency.

1. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5, unless otherwise indicated.
2. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

2.6 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Low-Emitting Materials: Paints and coatings shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Etching Cleaner for Galvanized Metal: Complying with MPI#25.
- D. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- E. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
- F. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.
- G. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.
- H. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.
- I. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.7 FABRICATION

- A. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- B. Form work true to line and level with accurate angles and surfaces.
- C. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove flux immediately.

4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- D. Welded Connections for Aluminum Pipe: Fabricate railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.
- E. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
- F. Form changes in direction by bending.
- G. For changes in direction made by bending, use jigs to produce uniform curvature for each repetitive configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- H. Close exposed ends of railing members with prefabricated end fittings.
- I. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated.
- J. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.
 1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers or other means to transfer loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.

2.8 STEEL AND IRON FINISHES

- A. Galvanized Railings:
 1. Hot-dip galvanize exterior steel railings, including hardware, after fabrication.
 2. Comply with ASTM A 123/A 123M for hot-dip galvanized railings.
 3. Comply with ASTM A 153/A 153M for hot-dip galvanized hardware.
- B. Preparing Galvanized Railings for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner.
- C. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- D. Primer Application: Apply shop primer to prepared surfaces of railings unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.
 1. Do not apply primer to galvanized surfaces.

2.9 STAINLESS-STEEL FINISHES

- A. Directional Satin Finish: No. 4.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
1. Do not weld, cut, or abrade surfaces of railing components that are coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
1. Coat, with a heavy coat of bituminous paint, concealed surfaces of aluminum that are in contact with grout, concrete, masonry, wood, or dissimilar metals.

3.2 ANCHORING POSTS

- A. Use metal sleeves preset and anchored into concrete for installing posts. After posts are inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Anchor posts to metal surfaces with oval flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members.

3.3 ATTACHING RAILINGS

- A. Attach railings to wall with wall brackets. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- B. Secure wall brackets and railing end flanges to building construction as follows:
1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
 2. For hollow masonry anchorage, use toggle bolts.

3. For wood stud partitions, use hanger or lag bolts set into studs or wood backing between studs. Coordinate with carpentry work to locate backing members.
4. For steel-framed partitions, use hanger or lag bolts set into fire-retardant-treated wood backing between studs. Coordinate with stud installation to locate backing members.
5. For steel-framed partitions, use self-tapping screws fastened to steel framing or to concealed steel reinforcements.
6. For steel-framed partitions, use toggle bolts installed through flanges of steel framing or through concealed steel reinforcements.

3.4 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 requirements for touching up shop-painted surfaces.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas, and repair galvanizing to comply with ASTM A 780/A 780M.

END OF SECTION 055213

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Wood blocking, cants, and nailers.
3. Wood furring and grounds.
4. Wood sleepers.
5. Utility shelving.
6. Plywood backing panels.

1.2 ACTION SUBMITTALS

- ##### **A. Product Data:** For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:

1. Preservative-treated wood.
2. Fire-retardant-treated wood.
3. Power-driven fasteners.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- ##### **A. Lumber:** DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 3. Provide dressed lumber, S4S, unless otherwise indicated.
- ##### **B. Maximum Moisture Content of Lumber:** 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness, unless otherwise indicated.

- C. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
 - 1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWPA U1.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Wood sills, sleepers, blocking, furring, and similar concealed members in contact with masonry or concrete.
 - 3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
 - 4. Wood framing members that are less than 18 inches above the ground in crawl spaces or unexcavated areas.
 - 5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
 - 1. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
 - 2. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.

- C. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Framing for raised platforms.
 - 2. Concealed blocking.
 - 3. Roof framing and blocking.
 - 4. Wood cants, nailers, curbs, equipment support bases, blocking, and similar members in connection with roofing.
 - 5. Plywood backing panels.

2.4 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: Construction or No. 2 grade.
 - 1. Application: Interior partitions not indicated as load-bearing.
 - 2. Species:
 - a. Southern pine; SPIB.
 - b. Douglas fir-larch (north); NLGA.
- B. Load-Bearing Partitions: No. 2 grade, Unless Indicated Otherwise on the Documents.
 - 1. Application: Exterior walls and interior load-bearing partitions.
 - 2. Species:
 - a. Southern pine; SPIB.
 - b. Douglas fir-larch (north); NLGA.
- C. Ceiling Joists: No. 2 grade, Unless Indicated Otherwise on the Documents.
 - 1. Species:
 - a. Southern pine; SPIB.
 - b. Douglas fir-larch (north); NLGA.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
 - 5. Furring.
 - 6. Grounds.
 - 7. Utility shelving.

- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.
- C. Utility Shelving: Lumber with 15 percent maximum moisture content of eastern white pine, Idaho white, lodgepole, ponderosa, or sugar pine; Premium or No. 2 Common (Sterling) grade; NeLMA, NLGA, WCLIB, or WWPA.
- D. Concealed Boards: 19 percent maximum moisture content of any of the following species and grades:
 - 1. Mixed southern pine or southern pine, No. 2 grade; SPIB.
 - 2. Northern species, No. 2 Common grade; NLGA.

2.6 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: DOC PS 1, Exterior, AC, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Screws for Fastening to Metal Framing: ASTM C 1002 or ASTM C 954, length as recommended by screw manufacturer for material being fastened.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- A. Nails, Brads, and Staples: ASTM F 1667.
- B. Power-Driven Fasteners: NES NER-272.
- C. Wood Screws: ASME B18.6.1.
- D. Lag Bolts: ASME B18.2.1.
- E. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- F. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry assemblies and equal to four times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

2.8 MISCELLANEOUS MATERIALS

- A. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
 1. Adhesives shall have a VOC content of 70 g/L or less.
 2. Adhesives shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- F. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
 2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
 3. ICC-ES evaluation report for fastener.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 062023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior trim.
2. Exterior trim
3. Shelving and clothes rods.
4. Wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
- B. Samples: For each type of paneling.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20.

1. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.
 - a. For exposed lumber, mark grade stamp on end or back of each piece.

B. Softwood Plywood: DOC PS 1.

C. Hardboard: AHA A135.4.

D. MDF: ANSI A208.2, Grade 130, made with binder containing no urea-formaldehyde resin.

E. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea-formaldehyde resin.

F. Melamine-Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M-2, finished on both faces with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.

1. Color: As selected by Architect from manufacturer's full range.

2.2 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
 - 1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent respectively.
- B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. For exposed lumber and plywood indicated to receive a stained or natural finish, mark back of each piece.
- C. Application: All interior lumber and plywood.

2.3 EXTERIOR TRIM

- A. Grade: Premium.
- B. Wood Species: Western red cedar.

2.4 INTERIOR TRIM

- A. Softwood Lumber Trim:
 - 1. Species and Grade: Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine; Premium or 2 Common (Sterling); NeLMA, NLGA, or WWPA.
 - 2. Maximum Moisture Content: 15 percent.
- B. Hardwood Lumber Trim:
 - 1. Species and Grade: Red oak, A Finish; NHLA.
 - 2. Maximum Moisture Content: 13 percent.
- C. Softwood Moldings for Transparent Finish (Stain or Clear Finish): WMMPA WM 4, N-grade wood moldings. Made to patterns included in WMMPA WM 12.
 - 1. Species: Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine.
 - 2. Maximum Moisture Content: 15 percent.
- D. Hardwood Moldings for Transparent Finish (Stain or Clear Finish): WMMPA HWM 2, N-grade wood moldings made to patterns included in WMMPA HWM 1.
 - 1. Species: Red oak.
 - 2. Maximum Moisture Content: 9 percent.

- E. Moldings for Opaque Finish (Painted Finish): Made to patterns included in WMMPA WM 12.
 - 1. Softwood Moldings: WMMPA WM 4, P grade.
 - a. Species: Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine.
 - b. Maximum Moisture Content: 15 percent.
 - 2. Hardwood Moldings: WMMPA HWM 2, P-grade.
 - a. Species: Aspen, basswood, cottonwood, gum, magnolia, soft maple, tupelo, or yellow poplar.
 - b. Maximum Moisture Content: 9 percent.
 - 3. Optional Material: Primed MDF.

2.5 SHELVING AND CLOTHES RODS

- A. Shelving: Made from the following material, 3/4 inch (19 mm) thick.
 - 1. Particleboard with solid-wood front edge.
- B. Shelf Brackets with Rod Support: BHMA A156.16, B04051; prime-painted formed steel.
- C. Clothes Rods: 1-1/2-inch- (38-mm-) diameter, chrome plated steel.

2.6 MISCELLANEOUS MATERIALS

- A. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.
- B. Paneling Adhesive: Comply with paneling manufacturer's written recommendations for adhesives.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION, GENERAL

- A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
2. Countersink fasteners, fill surface flush, and sand unless otherwise indicated.
3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
4. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.

3.3 STANDING AND RUNNING TRIM INSTALLATION

- A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Miter at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints.

3.4 SHELVING AND CLOTHES ROD INSTALLATION

- A. Cut shelf cleats at ends of shelves about 1/2 inch less than width of shelves and sand exposed ends smooth.
- B. Install shelf cleats by fastening to framing or backing with finish nails or trim screws, set below face and filled. Space fasteners not more than 16 inches o.c.
- C. Install shelf brackets according to manufacturer's written instructions, spaced not more than [32 inches o.c. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.
- D. Cut shelves to neatly fit openings with only enough gap to allow shelves to be removed and reinstalled. Install shelves, fully seated on cleats, brackets, and supports.

END OF SECTION 062023

SECTION 064116 - PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plastic-laminate-faced architectural cabinets.
2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets unless concealed within other construction before cabinet installation.

B. Related Requirements:

1. Section 123623 Plastic-Laminate-Clad Countertops.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product, including panel products, high-pressure decorative laminate, adhesive for bonding plastic laminate, and cabinet hardware and accessories.

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

C. Samples:

1. Plastic laminates, for each color, pattern, and surface finish.
2. Thermoset decorative panels, for each color, pattern, and surface finish.

1.3 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of architectural plastic-laminate cabinets indicated for construction, finishes, installation, and other requirements.

B. Grade: Premium.

- C. Type of Construction: Frameless.
- D. Cabinet, Door, and Drawer Front Interface Style: Flush overlay.
- E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by woodwork quality standard.
 - 1. Formica
 - 2. Wilsonart
 - 3. Nevamar
- F. Laminate Cladding for Exposed Surfaces:
 - 1. Horizontal Surfaces: Grade HGS.
 - 2. Postformed Surfaces: Grade HGP.
 - 3. Vertical Surfaces: Grade HGS.
 - 4. Pattern Direction: Vertically for doors and fixed panels, horizontally for drawer fronts.
- G. Materials for Semiexposed Surfaces:
 - 1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS or Thermoset decorative panels as required by AWI 400.
 - 2. Drawer Sides and Backs: Solid-hardwood lumber.
 - 3. Drawer Bottoms: Hardwood plywood.
- H. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. As selected by Architect from laminate manufacturer's full range in the following categories:
 - a. Solid colors, matte finish.
 - b. Wood grains, matte finish.
 - c. Patterns, matte finish.
- I. Plastic Laminate Schedule:
 - Hillcrest Community Center
 - 1. 6A-PL-01: Match existing beige.
 - 2. 6A-PL-02: Match existing green.
 - 3. 6A-PL-03: XX
 - 4. 6A-PL-04: Match existing purple.
 - Kansas City North Community Center
 - 5. 6B-PL-01: Match existing purple.
 - 6. 6B-PL-02: Match existing blue.
 - Tony Aguirre Community Center
 - 1. 6C-PL-01: Wilsonart 7945-07 Xanadu or equal to match existing.
 - 2. 6C-PL-02: Formica 3456-77 Mocha Travertine or equal to match existing.

Brush Creek Community Center

1. 6D-PL-01: Match existing tan fleck.
2. 6D-PL-02: Match existing green fleck.

2.2 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Wood Moisture Content: 5 to 10 percent.

- B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Medium-Density Fiberboard: ANSI A208.2, Grade 130.
2. Particleboard: ANSI A208.1, Grade M-2.
3. Softwood Plywood: DOC PS 1, medium-density overlay.
4. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1.
5. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.3 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 087111 "Door Hardware (Descriptive Specification)."

- B. Butt Hinges: 2-3/4-inch, five-knuckle steel hinges made from 0.095-inch-thick metal, and as follows:

1. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521.

- C. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 170 degrees of opening, self-closing.

- D. Back-Mounted Pulls: BHMA A156.9, B02011.

- E. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.

- F. Catches: Magnetic catches, BHMA A156.9, B03141.

- G. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.

- H. Shelf Rests: BHMA A156.9, B04013; metal.

- I. Drawer Slides: BHMA A156.9.

1. Grade 1 and Grade 2: Side mounted and extending under bottom edge of drawer; full-extension type; zinc-plated steel with polymer rollers.
2. Grade 1HD-100: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.
3. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 1.
4. For drawers more than 3 inches high but not more than 6 inches high and not more than 24 inches wide, provide Grade 1.
5. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-100.

J. Door Locks: BHMA A156.11, E07121.

K. Drawer Locks: BHMA A156.11, E07041.

L. Door and Drawer Silencers: BHMA A156.16, L03011.

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

1. Dark, Oxidized, Satin Bronze, Oil Rubbed: BHMA 613 for bronze base; BHMA 640 for steel base; match Architect's sample.
2. Bright Brass, Clear Coated: BHMA 605 for brass base; BHMA 632 for steel base.
3. Bright Brass, Vacuum Coated: BHMA 723 for brass base; BHMA 729 for zinc-coated-steel base.
4. Satin Brass, Blackened, Bright Relieved, Clear Coated: BHMA 610 for brass base; BHMA 636 for steel base.
5. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
6. Bright Chromium Plated: BHMA 625 for brass or bronze base; BHMA 651 for steel base.
7. Satin Stainless Steel: BHMA 630.

2.4 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- C. Adhesive for Bonding Plastic Laminate: Contact cement.
 1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.5 FABRICATION

- A. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for

shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

- B. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.

3.2 INSTALLATION

- A. Grade: Install cabinets to comply with same grade as item to be installed.
- B. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
- C. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- D. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork.
- E. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 - 1. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 - 2. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch penetration into wood framing, blocking, or hanging strips or No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish.

END OF SECTION 064116

SECTION 078413 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Penetrations in fire-resistance-rated walls, horizontal assemblies, or smoke barriers.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics:

1. Perform penetration firestopping system tests by a qualified testing agency acceptable to authorities having jurisdiction.
2. Test per testing standards referenced in "Penetration Firestopping Systems" Article. Provide rated systems complying with the following requirements:
 - a. Penetration firestopping systems shall bear classification marking of a qualified testing agency.

2.2 PENETRATION FIRESTOPPING SYSTEMS

- A. Penetration Firestopping Systems:** Systems that resist spread of fire, passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
- B. Penetrations in Fire-Resistance-Rated Walls:** Penetration firestopping systems with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
1. **F-Rating:** Not less than the fire-resistance rating of constructions penetrated.
- C. Penetrations in Horizontal Assemblies:** Penetration firestopping systems with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.

1. F-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated.
 2. T-Rating: At least one hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.
 3. W-Rating: Provide penetration firestopping systems showing no evidence of water leakage when tested according to UL 1479.
- D. Penetrations in Smoke Barriers: Penetration firestopping systems with ratings determined per UL 1479, based on testing at a positive pressure differential of 0.30-inch wg.
1. L-Rating: Not exceeding 5.0 cfm/sq. ft. of penetration opening at and no more than 50-cfm cumulative total for any 100 sq. ft. at both ambient and elevated temperatures.
- E. Exposed Penetration Firestopping Systems: Flame-spread and smoke-developed indexes of less than 25 and 450, respectively, per ASTM E 84.
- F. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping system manufacturer and approved by qualified testing and inspecting agency for conditions indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. General: Install penetration firestopping systems to comply with manufacturer's written installation instructions and published drawings for products and applications.
- C. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings.
 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not forming permanent components of firestopping.
- D. Install fill materials by proven techniques to produce the following results:
 1. Fill voids and cavities formed by openings, forming materials, accessories and penetrating items to achieve required fire-resistance ratings.
 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

END OF SECTION 078413

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Silicone joint sealants.
 - 2. Nonstaining silicone joint sealants.
 - 3. Urethane joint sealants.
 - 4. Mildew-resistant joint sealants.
 - 5. Latex joint sealants.

1.2 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Samples: For each kind and color of joint sealant required.

1.3 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

1.4 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following:
 - 1. Sealants and sealant primers for nonporous substrates shall have a VOC content of **250 g/L** or less.
 - 2. Sealants and sealant primers for nonporous substrates shall have a VOC content of **775 g/L** or less.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 URETHANE JOINT SEALANTS

- A. Urethane, S, P, 25, T, NT: Single-component, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C 920, Type S, Grade P, Class 25, Uses T and NT.
 - 1. BASF Corporation
 - 2. Pecora Corporation
 - 3. Polymeric Systems, Inc.
 - 4. Sherwin-Williams Company
- B. Urethane, M, NS, 25, T, NT: Multicomponent, nonsag, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C 920, Type M, Grade NS, Class 25, Uses T and NT.
 - 1. BASF Corporation
 - 2. Bostik, Inc.
 - 3. LymTal International, Inc.
 - 4. Sika Corporation

2.3 MILDEW-RESISTANT JOINT SEALANTS

- A. Mildew-Resistant Joint Sealants: Formulated for prolonged exposure to humidity with fungicide to prevent mold and mildew growth.
- B. Silicone, Mildew Resistant, Acid Curing, S, NS, 25, NT: Mildew-resistant, single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C 920, Type S, Grade NS, Class 25, Use NT.
 - 1. Dow Corning Corporation
 - 2. GE Construction Sealants
 - 3. May National Associates
 - 4. Soudal USA
 - 5. Tremco Incorporated

2.4 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
 - a. Pecora Corporation
 - b. BASF Construction Chemicals, LLC, Building Systems.
 - c. May National Associates, Inc., a subsidiary of Sika Corporation U.S..
 - d. Sherwin-Williams Company.
 - e. Tremco Incorporated.

2.5 JOINT-SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C 1330, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove laitance and form-release agents from concrete.
 - 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.

3.2 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with ASTM C 1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 1. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

3.3 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in horizontal traffic surfaces.
 - 1. Joint Locations:
 - a. Isolation and contraction joints in cast-in-place concrete slabs.
 - b. Joints between dissimilar materials.
 - c. Other joints as indicated on Drawings.
 - 2. Joint Sealant: Urethane, S, P, 25, T, NT.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
 - 1. Joint Locations:
 - a. Construction joints in cast-in-place concrete.
 - b. Joints between plant-precast architectural concrete units.
 - c. Control and expansion joints in unit masonry.
 - d. Joints in dimension stone cladding.
 - e. Joints between dissimilar materials.
 - f. Other joints as indicated on Drawings.

2. Joint Sealant: Urethane, M, NS, 50, T, NT.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- C. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.
1. Joint Locations:
 - a. Control joints on exposed interior surfaces of exterior walls.
 - b. Perimeter joints between interior wall surfaces and frames of all doors, windows and elevator entrances.
 - c. Vertical joints on exposed surfaces of walls and partitions.
 - d. Joints between dissimilar materials.
 - e. Other joints as indicated on Drawings.
 2. Joint Sealant: Acrylic latex.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
 - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - b. Joints between counters and walls.
 - c. Tile control and expansion joints where indicated.
 - d. Other joints as indicated on Drawings.
 2. Joint Sealant: Silicone, mildew resistant, acid curing, S, NS, 25, NT.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- E. Joint-Sealant Application: Concealed mastics.
1. Joint Locations:
 - a. Aluminum thresholds.
 - b. Sill plates.
 - c. Other joints as indicated on Drawings.
 2. Joint Sealant: Butyl-rubber based.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes hollow-metal work.

1.2 DEFINITIONS

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

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details.
- C. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Amweld International, LLC
- B. Benchmark
- C. Ceco Door Products
- D. Curries Company
- E. Greensteel Industries
- F. Pioneer Industries
- G. Republic Doors and Frames
- H. Steelcraft

2.2 REGULATORY REQUIREMENTS

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

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

2.3 INTERIOR DOORS AND FRAMES

- A. Heavy-Duty Doors and Frames: SDI A250.8, Level 2.
 - 1. Physical Performance: Level B according to SDI A250.4.
 - 2. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches.
 - c. Face: Uncoated cold-rolled steel sheet, minimum 18 gage.
 - d. Edge Construction: Model 2, Seamless.
 - e. Core: Manufacturer's standard.
 - 3. Frames:
 - a. Materials: Uncoated steel sheet, minimum 16 gage steel
 - b. Sidelite and Transom Frames: Fabricated from same thickness material as adjacent door frame.
 - c. Construction: Full profile welded (frames installed in existing walls to be knock down frames unless noted otherwise).
 - 4. Exposed Finish: Prime.

2.4 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

- A. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3.
 - 1. Physical Performance: Level A according to SDI A250.4.
 - 2. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches.
 - c. Face: Metallic-coated steel sheet, minimum 16 gage steel, with minimum A40 coating.
 - d. Edge Construction: Model 2, Seamless.
 - e. Core: Manufacturer's standard insulation material.
 - 3. Thermal-Rated Doors: Provide doors fabricated with thermal-resistance value (R-value) of not less than R 6.35 when tested according to ASTM C 518.
 - 4. Frames:
 - a. Materials: Metallic-coated steel sheet, minimum 14 gage with minimum A40 coating.
 - b. Construction: Full profile welded.
 - 5. Exposed Finish: Prime.

2.5 BORROWED LITES

- A. Hollow-metal frames of uncoated steel sheet, minimum 16 gage steel.
- B. Construction: Full profile welded.

2.6 FRAME ANCHORS

- A. Jamb Anchors:
 - 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
 - 2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
 - 3. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.
 - 4. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:
 - 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
 - 2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

2.7 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.
- D. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- F. Power-Actuated Fasteners in Concrete: From corrosion-resistant materials.

- G. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.
- H. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing).
- I. Glazing: Section 088000 "Glazing."
- J. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat.

2.8 FABRICATION

- A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Hollow-Metal Doors:
 - 1. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
 - 2. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated.
- C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Sidelite and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
 - 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 - 4. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
 - 5. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches o.c., to match coursing, and as follows:
 - 1) Two anchors per jamb up to 60 inches high.
 - 2) Three anchors per jamb from 60 to 90 inches high.
 - 3) Four anchors per jamb from 90 to 120 inches high.
 - 4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

- b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Three anchors per jamb up to 60 inches high.
 - 2) Four anchors per jamb from 60 to 90 inches high.
 - 3) Five anchors per jamb from 90 to 96 inches high.
 - 4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
 - c. Compression Type: Not less than two anchors in each frame.
 - d. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
6. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers.
- a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- D. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
- 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.
- E. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with butted hairline joints.
- 1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
 - 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 - 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
 - 4. Provide loose stops and moldings on inside of hollow-metal work.
 - 5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.
- 2.9 STEEL FINISHES
- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 - 1. Shop Primer: SDI A250.10.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Hollow-Metal Frames: Install hollow-metal frames for doors, transoms, sidelites, borrowed lites, and other openings, of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. At fire-rated openings, install frames according to NFPA 80.
 - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - c. Install frames with removable stops located on secure side of opening.
 - d. Install door silencers in frames before grouting.
 - e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 - g. Field apply bituminous coating to backs of frames that will be filled with grout containing antifreezing agents.
 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
 4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
 5. Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.
 6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 7. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.
 8. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.

- d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- B. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
 - 1. Non-Fire-Rated Steel Doors:
 - a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
 - c. At Bottom of Door: 5/8 inch plus or minus 1/32 inch.
 - d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.
 - 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- C. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.
 - 1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

3.2 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow-metal work immediately after installation.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid-core doors with wood-veneer faces.
2. Factory fitting flush wood doors to frames and factory machining for hardware.
3. Glazing for door lights.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of door.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:

1. Dimensions and locations of blocking.
2. Dimensions and locations of mortises and holes for hardware.
3. Dimensions and locations of cutouts.
4. Undercuts.
5. Requirements for veneer matching.
6. Fire-protection ratings for fire-rated doors.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Algoma Hardwoods, Inc.
- B. Eggers Industries.
- C. Graham Wood Doors.
- D. VT Industries.

2.2 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush Doors."
- B. WDMA I.S.1-A Performance Grade:
 1. Heavy Duty unless otherwise indicated.

C. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL 10C.

1. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
2. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
3. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.

D. Particleboard-Core Doors:

1. Particleboard: ANSI A208.1, Grade LD-2.
2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.

2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH

A. Interior Solid-Core Doors:

1. Grade: Premium, with Grade AA faces.
2. Species: Red Oak.
3. Cut: Plain sliced (flat sliced) at Hillcrest and Bruch Creek, rift cut at KC North.
4. Match between Veneer Leaves: Book match.
5. Assembly of Veneer Leaves on Door Faces: Balance match.
6. Pair and Set Match: Provide for doors hung in same opening.
7. Core: Particleboard
8. Construction: Five or seven plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.

2.4 LIGHT FRAMES AND LOUVERS

A. Wood-Veneered Beads for Light Openings in Fire-Rated Doors: Manufacturer's standard wood-veneered noncombustible beads matching veneer species of door faces and approved for use in doors of fire-protection rating indicated. Include concealed metal glazing clips where required for opening size and fire-protection rating indicated.

B. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inch- thick, cold-rolled steel sheet; factory primed for paint finish; and approved for use in doors of fire-protection rating indicated.

2.5 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

1. Comply with NFPA 80 requirements for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied.
- C. Openings: Factory cut and trim openings through doors.
 1. Light Openings: Trim openings with moldings of material and profile indicated.
 1. Glazing: Install glazing in doors indicated:
 - a. Fully Tempered Float Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear), Quality-Q3.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
 1. Install fire-rated doors according to NFPA 80.
- C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
 1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.
 - a. Comply with NFPA 80 for fire-rated doors.

END OF SECTION 081416

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

- A. Intent: The intent of this Section is to provide finish hardware for the proper operation and control of all wood, hollow metal, and aluminum doors in the Project. Prior to bidding, notify the Architect of any doors that do not have hardware meeting this intention
- B. Section Includes: Provide all items of finish hardware required to adequately trim, hang, and operate all doors, as is hereinafter specified and listed in the Hardware Schedule.
 - 1. The hardware supplier will be responsible to furnish correct hardware on labeled doors to satisfy State and Local Building Codes.
 - 2. Should items of hardware, not definitely specified, be required for completion of work, furnish such items of type and quality suitable to the services required and comparable to the adjacent hardware.
 - 3. Provide all necessary standard and special fasteners, screws, bolts, expansion shields or anchors to properly secure hardware to its intended door, frame, or other surface.
 - 4. Provide electrified door hardware as specified and coordinate with other Sections to provide all components required.
- C. Products furnished, but not installed, under this Section include the products listed below. Coordinating and scheduling the purchase and delivery of these products remain requirements of this Section.
 - 1. Pivots, thresholds, weather stripping, and lock cylinders to be installed under other Sections.

1.2 ACTION SUBMITTALS & SUBSTITUTIONS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Details of electrified door hardware.
- C. Samples: For any finish outside of the satin chrome/stainless steel finish family provide a sample of each lock, exit, and closer in each finish specified. Tag samples with full description for coordination with door hardware schedule. Submit samples before, or concurrent with submission of door hardware schedule.
- D. Other Action Submittals:
 - 1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - a. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.

- b. Content: Include the following information:
 - 1) Identification number, location, hand, fire rating, size, and material of each door and frame.
 - 2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - 3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - 4) Description of electrified door hardware sequences of operation and interfaces with other building control systems.
2. Wiring Diagrams: For electrified hardware items specified for this Project, Provide complete wiring diagrams along with riser drawings and elevations, showing locations where such material is to be installed. Wiring Diagrams shall be submitted with Hardware Schedule. Verify and coordinate with the electrical systems installer.
 - a. Operation Narrative: Describe the operation of doors controlled by electrified door hardware.
3. Samples for Verification: If so requested by the Architect, provide a sample of any product or item requested, properly marked and tagged, for the opening for which it is intended.
4. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks.
5. Substitutions: Make substitution requests in accordance with Division 1. Substitution requests must be made prior to bid date. Include product data and indicate benefit to the project. Furnish samples of any proposed substitution.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
- B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as follows:
 1. For door hardware, an Architectural Hardware Consultant (AHC).
- C. Source Limitations: Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
- D. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.
- E. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meet requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at the tested pressure differential of 0.3-inch wg (75 Pa) of water.
- F. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- G. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- H. Accessibility Requirements: Comply with applicable provisions in the DOJ's 2010 ADA Standards for Accessible Design and ICC A117.1 for door hardware on doors in an accessible route.
 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
 2. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
 - b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
 - c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
 4. Closers: Adjust door and gate closer sweep periods so that, from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.
 5. Spring Hinges: Adjust door and gate spring hinges so that, from an open position of 70 degrees, the time required to move the door to the closed position is 1.5 seconds minimum.
- I. Keying Conference: Conduct conference at Project site to comply with requirements in Section 01310 "Project Management and Coordination."

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.
- B. Where required deliver keys and cylinders/permanent cores to Owner by registered mail or overnight package service.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fails in materials or workmanship within specified warranty period.
 1. Warranty Period: Five years from date of Substantial Completion, unless otherwise indicated.
 - a. Electromagnetic and Delayed-Egress Locks: Five years from date of Substantial Completion.
 - b. Exit Devices: Five years from date of Substantial Completion.

- c. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article and as referenced on Drawings to comply with requirements in this Section.
1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products.
 2. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by using door hardware designations, as follows:
1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Schedule" Article.

2.2 HINGES

- A. Hinges: BHMA A156.1.
1. Provide non-removable pins for all exterior doors. Use nonrising pins for all other doors.
 2. Hinges are to match appearance and weight of existing hinges.
 3. Verify sizing of existing hinge prep and provide appropriate hinge required.
 4. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Ives; an Allegion Company.
 - b. Bommer Industries.
 - c. Hager Hinge Company.

2.3 MECHANICAL LOCKS AND LATCHES

- A. Strikes: Provide manufacturer's standard strike for each lock bolt or latch-bolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
1. Flat-Lip Strikes: For locks with three-piece antifriction latch-bolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.
 4. Rabbet Front and Strike: Provide on locksets for rabbeted meeting stiles.

- B. Bored Locks: BHMA A156.2; Grade 1; Series 4000.
1. New locksets are to match finish and design of existing locks to the greatest extent possible.
 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Schlage Commercial Lock Division; an Allegion company.
 - b. Sargent; an ASSA Abloy company.
 - c. Best Lock; a Stanley Best Company.
- C. Mortise Locks: BHMA A156.13; Grade 1; stamped steel case with steel or brass parts; Series 1000.
1. New locksets are to match finish and design of existing locks to the greatest extent possible.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Schlage Commercial Lock Division; an Allegion company.
 - b. Sargent; an ASSA Abloy company.
 - c. Best Lock; a Stanley Best Company.

2.4 AUXILIARY LOCKS

- A. Bored Auxiliary Locks: BHMA A156.5: Grade 1; with strike that suits frame.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Schlage Commercial Lock Division; an Allegion company.
 - b. Sargent; an ASSA Abloy company.
 - c. Best Lock; a Stanley Best Company.
- B. Mortise Auxiliary Locks: BHMA A156.5; Grade 1; with strike that suits frame.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Schlage Commercial Lock Division; an Allegion company.
 - b. Sargent; an ASSA Abloy company.
 - c. Best Lock; a Stanley Best Company.
- C. Narrow Stile Auxiliary Locks: BHMA A156.5; Grade 1; with strike that suits frame.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Accurate Lock Company.
 - b. Adams Rite Manufacturing Co.; an ASSA ABLOY Group company.

2.5 ELECTROMAGNETIC LOCKS

- A. Electromagnetic Locks: BHMA A156.23; electrically powered; with electromagnet attached to frame and armature plate attached to door; full-exterior or full-interior type, as required by application indicated.
1. All maglocks to have built in door position switch and magnetic bond sensor.
 2. Maglocks must be available in satin black finish.
 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Schlage Commercial Lock Division; an Allegion companyDortronics Systems, Inc.
 - b. Securitron Magnalock Corporation; an ASSA ABLOY Group company.

2.6 ELECTRONIC STRIKES

- A. Electromechanical Strikes: BHMA A156.5; Grade 1.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Von Duprin; an Allegion company
 - b. HES; an ASSA ABLOY Group company.

2.7 EXIT LOCKS AND EXIT ALARMS

- A. Exit Locks and Alarms: BHMA A156.29, Grade 1.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Schlage Commercial Lock Division; an Allegion company.
 - b. Detex Corporation.

2.8 SURFACE BOLTS

- A. Surface Bolts: BHMA A156.16.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. IVES Hardware; an Allegion company.
 - b. Trimco.
 - c. Rockwood; an ASSA ABLOY Group company.

2.9 MANUAL FLUSH BOLTS

- A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch (19-mm) throw; designed for mortising into door edge.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Adams Rite Manufacturing Co.; an ASSA ABLOY Group company.
 - b. IVES Hardware; an Allegion company.
 - c. Trimco.

2.10 AUTOMATIC AND SELF-LATCHING FLUSH BOLTS

- A. Automatic and Self-Latching Flush Bolts: BHMA A156.16; minimum 3/4-inch (19-mm) throw; designed for mortising into door edge.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. IVES Hardware; an Allegion company.
 - b. Trimco.
 - c. Rockwood; an ASSA ABLOY Group company.

2.11 EXIT DEVICES AND AUXILIARY ITEMS

- A. Exit Devices and Auxiliary Items: BHMA A156.3.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Von Duprin; an Allegion company.
 - b. Sargent; an ASSA Abloy company.
 - c. Falcon; an Allegion company.

2.12 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.
 1. Manufacturer: Verify existing key system and cylinder type and provide new cylinders to match.
 2. If reusing existing cylinders verify compatibility to new lockset. Provide new cam/tailpiece as required. If existing cylinder cannot be reused replace with new cylinder.
- B. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.
- C. Construction Cores: Provide construction cores that are replaceable by permanent cores at all exterior openings where interchangeable cores are specified. Provide 10 construction master keys.

2.13 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference.
 - 1. Existing System:
 - a. Master key or grand master key locks to Owner's existing system.
 - 2. Keyed Alike: Key all cylinders to same change key.
- B. Keys: Brass.
 - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: "DO NOT DUPLICATE."
 - 2. Quantity: In addition to one extra key blank for each lock, provide the following:
 - a. Cylinder Change Keys: Three.
 - b. Master Keys: Five.
 - c. Grand Master Keys: Five.
 - d. Great-Grand Master Keys: Five.

2.14 OPERATING TRIM

- A. Operating Trim: BHMA A156.6.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Burns Manufacturing Incorporated.
 - b. IVES Hardware: an Allegion company.
 - c. Rockwood Manufacturing Company.

2.15 ACCESSORIES FOR PAIRS OF DOORS

- A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release.
- B. Carry-Open Bars: BHMA A156.3; prevent the inactive leaf from opening before the active leaf; provide polished brass or bronze carry-open bars with strike plate for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.
- C. Astragals: BHMA A156.22.

2.16 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves, cast iron body, and forged-steel main arm. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
1. Closer cylinders, arms, adapter plates, and metal covers shall have a powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117.
 2. Provide the manufactures drop plates, brackets and spacers as required at narrow head rails and special frame conditions.
 3. Closers with pressure relief valves will not be acceptable.
 4. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. LCN Closers; an Allegion company.
 - b. Sargent; an ASSA ABLOY Group company.

2.17 MECHANICAL STOPS AND HOLDERS

- A. Wall- and Floor-Mounted Stops: BHMA A156.16.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Burns Manufacturing Incorporated.
 - b. IVES Hardware; an Allegion company.
 - c. Rockwood Manufacturing Company.

2.18 OVERHEAD STOPS AND HOLDERS

- A. Overhead Stops and Holders: BHMA A156.8.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Glynn-Johnson; an Allegion company.

2.19 DOOR GASKETING

- A. Door Gasketing: BHMA A156.22; air leakage not to exceed 0.50 cfm per foot (0.000774 cu. m/s per m) of crack length for gasketing other than for smoke control, as tested according to ASTM E 283; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. National Guard Products.
- b. Reese Enterprises, Inc.
- c. Zero International.

2.20 THRESHOLDS

- A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. National Guard Products.
 - b. Reese Enterprises, Inc.
 - c. Zero International.

2.21 METAL PROTECTIVE TRIM UNITS

- A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch- (1.3-mm-) thick; with manufacturer's standard machine or self-tapping screw fasteners.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Burns Manufacturing Incorporated.
 - b. IVES Hardware; an Allegion company.
 - c. Rockwood Manufacturing Company.

2.22 AUXILIARY DOOR HARDWARE

- A. Auxiliary Hardware: BHMA A156.16.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. IVES Hardware; an Allegion company.
 - b. Rockwood Manufacturing Company.
 - c. Stanley Commercial Hardware; Div. of The Stanley Works.

2.23 AUXILIARY ELECTRIFIED DOOR HARDWARE

- A. Miscellaneous Electrified Hardware:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Von Duprin; an Allegion company.
 - b. Schlage Commercial Lock Division; an Allegion company.
 - c. Securitron Magnalock Corporation; an ASSA ABLOY Group company.
- B. Access Control Components:
 1. Division 8 Contactor shall provide physical access control systems card readers, locking devices, door status monitors, request to exit devices, and secondary "Push to Exit"

devices that are compatible with the Owners access control software platform. Any substitutions shall be approved in writing prior to purchase or installation.

2.24 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 2. Fire-Rated Applications:
 - a. Wood or Machine Screws: For the following:
 - 1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
 - 2) Strike plates to frames.
 - 3) Closers to doors and frames.
 - b. Steel Through Bolts: For the following unless door blocking is provided:
 - 1) Surface hinges to doors.
 - 2) Closers to doors and frames.
 - 3) Surface-mounted exit devices.
 3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
 4. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."
 5. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.25 SPECIAL NOTES

- A. All doors to have operable hardware.
- B. Fire rated hardware and smoke seals are to be provided on rated openings. Provide intumescent seal if required by door/frames supplier.
- C. Inspect each opening and verify existing hardware is in working condition and then repair or provide additional parts as required. Inspect every door in schedule to ensure closer opening/closing forces are compliant with ADA and ICC standards referenced in Part 1. Adjust closer or provide new closer or door hardware components if required to meet standard.

- D. Verify hardware specified will function with existing hardware and door conditions. If existing doors/frames are to be reused they must be field verified prior to ordering hardware. Modify hardware sets if required by existing conditions. Hardware shall be supplied to meet design intent to greatest extent possible and function with existing conditions.
- E. Where hardware preparation has changed door and frame must be repaired and/or refinished or proper cover plate(s) to be supplied.
- F. Verify access control requirements with Owner.
 - 1. Provide card readers that are compatible with Owners existing system.
 - 2. Provide appropriate access control software/hardware for door hardware specified.

2.26 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule. Hardware to match existing historic finish as closely as possible.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Installation shall be by a qualified installer with a minimum five (5) years experience in the installation of commercial grade hardware. Manufacturer's instructions shall dictate templating and installation.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- C. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
- D. Wood Doors: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

- E. Mounting Heights: Mount door hardware units at heights **to comply with the following** unless existing, otherwise indicated, or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

- F. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

- G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

- H. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).

- I. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

- J. Motion Sensors for Magnetic Locks: Verify proper mounting location above door. Motion detector must work when transoms are in open or closed position. Adjust sensor properly to detect persons approaching door and minimize false unlocking by background movement in room near the door.

- K. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, verify location with Architect.
 - 1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.

- L. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant complying with requirements specified in Section 07920 "Joint Sealants."

- M. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

- N. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

- O. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

- P. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- Q. Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.3 FIELD QUALITY CONTROL

- A. Independent Architectural Hardware Consultant: Owner will engage a qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.
- B. Perform final inspection with hardware installer and hardware supplier present to ensure correct installation and operation, and check for any damaged or defective items. Observe and inspect that all hardware has been installed to its correct destination in proper working order.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended.
 - 1. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
 - 3. Door Closers: Adjust door closers immediately upon installation. Adjust in exact conformance with manufacturer's printed instructions. Advance backcheck to eliminate shock at dead stop. Set closer latching speed to assure unassisted positive latching.
 - a. Degree of swing of door for self-limiting closers shall be maximum available.
 - 4. Adjust all exit devices immediately upon installation. Adjust in exact conformance with manufacturers' printed instructions.
 - 5. Seal weather protection components attached to the exterior sides of doors and frames, such as drip caps and weather-stripping, in place with clear silicone caulk in such a manner as to ensure a continuously filled seam throughout the joinery.
 - 6. Cut and fit weatherstripping accurately to provide the greatest possible continuity of the contact element. Adjust closer template as required.
- B. At completion of the installation and prior to Substantial Completion, make final adjustments to door closures and other items of hardware. Leave all hardware clean and fully operable. Should any item be found to be defective, it shall be repaired or replaced as directed.
- C. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust, including adjusting operating forces, each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.

- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DEMONSTRATION

- A. Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.
- B. After hardware is installed and adjusted, the Supplier shall inspect the job with the Architect and the General contractor to determine if the hardware is functioning properly

3.7 DOOR HARDWARE SCHEDULE

- A. The hardware sets listed below represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process.

HARDWARE SET: 6A-01

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA NOTE	ADJUST CLOSER(S) TO MEET ADA REQUIREMENTS (PROVIDE UNIT PRICE FOR NEW CLOSER IF EXISTING CANNOT BE ADJUSTED)		

HARDWARE SET: 6A-02

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA SURFACE CLOSER	4111 SCUSH (AT NORTH LEAF ONLY)	689	LCN
1	EA THRESHOLD	425	AL	NGP
1	EA NOTE	ADJUST CLOSER(S) TO MEET ADA REQUIREMENTS (PROVIDE UNIT PRICE FOR NEW CLOSER IF EXISTING CANNOT BE ADJUSTED)		

HARDWARE SET: 6A-03

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA WALL STOP	WS406/407CCV	630	IVE
1	EA NOTE	ADJUST CLOSER(S) TO MEET ADA REQUIREMENTS (PROVIDE UNIT PRICE FOR NEW CLOSER IF EXISTING CANNOT BE ADJUSTED)		

NOTE: REMOVE EXISTING FLOOR STOP AND PATCH FLOOR AS NECESSARY.

HARDWARE SET: 6A-04

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA THRESHOLD	425	AL	NGP
1	EA NOTE	REMAINDER OF HARDWARE EXISTING		

HARDWARE SET: 6A-05

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
4	EA HW HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA DUTCH DOOR BOLT	054	626	IVE
1	EA CLASSROOM LOCK	L9070P 06A	626	SCH
2	EA WALL STOP	WS406/407CCV	630	IVE
4	EA SILENCER	SR64	GRY	IVE

HARDWARE SET: 6B-01

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA NOTE	ADJUST CLOSER(S) TO MEET ADA REQUIREMENTS (PROVIDE UNIT PRICE FOR NEW CLOSER IF EXISTING CANNOT BE ADJUSTED)		

HARDWARE SET: 6B-02

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA 1/2" OFFSET RAMP THRESH	R050	719	NGP
1	EA NOTE	ADJUST CLOSER(S) TO MEET ADA REQUIREMENTS (PROVIDE UNIT PRICE FOR NEW CLOSER IF EXISTING CANNOT BE ADJUSTED)		

HARDWARE SET: 6B-03

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA STOREROOM LOCK	ND80PD RHO	626	SCH
1	EA NOTE	REMAINDER OF HARDWARE EXISTING		

NOTE: IF EXISTING LOCKSET FUNCTION DIFFERS FROM FUNCTION SPECIFIED ABOVE, MATCH EXISTING LOCKSET FUNCTION.

HARDWARE SET: 6B-04

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	NOTE	REMOVE EXISTING CLOSER. PATCH/REFINISH DOOR & FRAME.		

HARDWARE SET: 6B-05

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	ND70PD RHO	626	SCH
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

NOTE: IF EXISTING LOCKSET FUNCTION DIFFERS FROM FUNCTION SPECIFIED ABOVE, MATCH EXISTING LOCKSET FUNCTION.

HARDWARE SET: 6B-06

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HW HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	SET	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP1/DP2 AS REQ'D	626	IVE
1	EA	PANIC HARDWARE	9975-L-996-06	626	VON
1	EA	MORT CYLINDER	CYLINDER TO MATCH EXISTING	626	SCH
1	EA	LOCK GUARD	LG10	630	IVE
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB	689	IVE
2	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B4E	630	IVE
1	EA	DRIP CAP	16A	CL	NGP
1	SET	SEALS	700NA	CL	NGP
1	SET	ASTRAGAL	125NA	CL	NGP
1	EA	THRESHOLD	896V	AL	NGP

HARDWARE SET: 6B-07

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	1/2" OFFSET RAMP THRESH	R050	719	NGP

HARDWARE SET: 6C-01

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
EA	NOTE	ADJUST CLOSER(S) TO MEET ADA REQUIREMENTS (PROVIDE UNIT PRICE FOR NEW CLOSER IF EXISTING CANNOT BE ADJUSTED)		

HARDWARE SET: 6C-02

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR		
6	EA	HW HINGE		5BB1HW 4.5 X 4.5	652	IVE
2	EA	PUSH PLATE		8200 4" X 16"	630	IVE
2	EA	PULL PLATE		8303 10" 4" X 16"	630	IVE
1	EA	SURFACE CLOSER		4111 SCUSH	695	LCN
2	EA	KICK PLATE		8400 10" X 2" LDW B4E	630	IVE
1	SET	ASTRAGAL		9600A	CL	NGP
2	EA	SILENCER		SR64	GRY	IVE

NOTE: SALVAGE AND RE-INSTALL EXISTING AUTO OPERATOR AND ACTUATORS.

HARDWARE SET: 6D-01

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR		
1	EA	NOTE		ADJUST CLOSER(S) TO MEET ADA REQUIREMENTS (PROVIDE UNIT PRICE FOR NEW CLOSER IF EXISTING CANNOT BE ADJUSTED)		

HARDWARE SET: 6D-02

EACH TO HAVE:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR		
3	EA	HW HINGE		5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM DEAD LOCK		L463L	626	SCH
1	EA	MORT CYLINDER		CYLINDER TO MATCH EXISTING	626	SCH
1	EA	PUSH PLATE		8200 4" X 16"	630	IVE
1	EA	PULL PLATE		8303 10" 4" X 16"	630	IVE
1	EA	SURFACE CLOSER		4111 HEDA	689	LCN
1	EA	KICK PLATE		8400 10" X 2" LDW B4E	630	IVE
1	EA	WALL STOP		WS406/407CCV	630	IVE
3	EA	SILENCER		SR64	GRY	IVE

HARDWARE SET: 6D-03

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080L 03A	626	SCH
1	EA	MORT CYLINDER	CYLINDER TO MATCH EXISTING	626	SCH
1	EA	SURFACE CLOSER	4111 CUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 6D-04

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HW HINGE	5BB1HW 4.5 X 4.5	652	IVE
2	EA	MANUAL FLUSH BOLT	FB358	626	IVE
1	EA	DUST PROOF STRIKE	DP1/DP2 AS REQ'D	626	IVE
1	EA	STOREROOM LOCK	L9080L 03A	626	SCH
1	EA	MORT CYLINDER	CYLINDER TO MATCH EXISTING	626	SCH
2	EA	OH STOP	90S	630	GLY
2	EA	KICK PLATE	8400 10" X 1" LDW B4E	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

HARDWARE SET: 6D-05

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	NOTE	SHIM HINGES OR TRIM DOOR TO ALLOW 90 DEGREE SWING		

HARDWARE SET: 6D-06

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070L 03A	626	SCH
1	EA	MORT CYLINDER	CYLINDER TO MATCH EXISTING	626	SCH
1	EA	SURFACE CLOSER	4011	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

END OF SECTION 087100

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior partitions.
2. Suspension systems for interior ceilings and soffits.

1.2 ACTION SUBMITTALS

- A. Product Data:** For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics:** For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies:** For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 FRAMING SYSTEMS

- A. Framing Members, General:** Comply with ASTM C 754 for conditions indicated.
1. **Steel Sheet Components:** Comply with ASTM C 645 requirements for metal unless otherwise indicated.
 2. **Protective Coating:** ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized unless otherwise indicated.
- B. Studs and Runners:** ASTM C 645.
1. **Steel Studs and Runners:**
 - a. **Minimum Base-Metal Thickness:** 0.0179 inch (25 gauge), with 0.0296 inch (20 gauge at door jambs).
 - b. **Depth:** As indicated on Drawings.
- C. Slip-Type Head Joints:** Where indicated, provide one of the following:

1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to runners while allowing 1-1/2-inch minimum vertical movement.
 2. Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch-deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
 3. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch-deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
 4. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
- D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
1. Minimum Base-Metal Thickness: 0.0296 inch.
- E. Cold-Rolled Channel Bridging: Steel, 0.0538-inch minimum base-metal thickness, with minimum 1/2-inch-wide flanges.
1. Depth: 1-1/2 inches.
 2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch-thick, galvanized steel.
- F. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
1. Minimum Base-Metal Thickness: 0.0179 inch.
 2. Depth: 7/8 inch.
- G. Cold-Rolled Furring Channels: 0.053-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges.
1. Depth: 3/4 inch.
 2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of 0.0329 inch.
 3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.

2.3 SUSPENSION SYSTEMS

- A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch-diameter wire, or double strand of 0.048-inch-diameter wire.
- B. Hanger Attachments to Concrete:
1. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488/E 488M conducted by a qualified testing agency.
 2. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated

according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

- C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.
- D. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch and minimum 1/2-inch-wide flanges.
 - 1. Depth: 2-1/2 inches.
- E. Furring Channels (Furring Members):
 - 1. Cold-Rolled Channels: 0.0538-inch uncoated-steel thickness, with minimum 1/2-inch-wide flanges, 3/4 inch deep.
 - 2. Steel Studs and Runners: ASTM C 645.
 - a. Minimum Base-Metal Thickness: 0.0179 inch
 - b. Depth: As indicated on Drawings
 - 3. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep.
 - a. Minimum Base-Metal Thickness: 0.0179 inch.

2.4 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide one of the following:
 - 1. Asphalt-Saturated Organic Felt: ASTM D 226/D 226M, Type I (No. 15 asphalt felt), nonperforated.
 - 2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754.
 - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.
- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.

- C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- D. Install bracing at terminations in assemblies.
- E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.2 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.
 - 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
 - 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb unless otherwise indicated.
 - b. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
 - 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
 - 4. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
 - 5. Curved Partitions:
 - a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
 - b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches o.c.
- E. Direct Furring:
 - 1. Screw to wood framing.
 - 2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches o.c.

- F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.3 INSTALLING SUSPENSION SYSTEMS

- A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.
- C. Suspend hangers from building structure as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
 - a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
 - a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.
 - 3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 - 4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
 - 5. Do not attach hangers to steel roof deck.
 - 6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 - 7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
 - 8. Do not connect or suspend steel framing from ducts, pipes, or conduit.
- D. Seismic Bracing: Sway-brace suspension systems with hangers used for support.
- E. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.
2. Exterior gypsum board for ceilings and soffits.
3. Tile backing panels.
4. Texture finishes.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each texture finish indicated on same backing indicated for Work.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.
- B. Manufacturers:
 1. American Gypsum
 2. Georgia-Pacific Building
 3. National Gypsum Company
 4. Temple-Inland Building Products
 5. USG

2.2 INTERIOR GYPSUM BOARD

- A. Gypsum Board, Type X: ASTM C 1396/C 1396M.
 1. Thickness: 5/8 inch.
 2. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
- B. Flexible Gypsum Board: ASTM C 1396/C 1396M. Manufactured to bend to fit radii and to be more flexible than standard regular-type gypsum board of same thickness.
 1. Thickness: 1/4 inch.

2. Long Edges: Tapered.

C. Gypsum Ceiling Board: ASTM C 1396/C 1396M.

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

D. Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.

1. Core: 5/8 inch, Type X.
2. Long Edges: Tapered.
3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.3 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

A. Exterior Gypsum Soffit Board: ASTM C 1396/C 1396M, with manufacturer's standard edges.

1. Core: 5/8 inch, Type X.

B. Glass-Mat Gypsum Sheathing Board: ASTM C 1177/C 1177M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.

1. Core: 5/8 inch, Type X.

2.4 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 and ASTM C 1288 or ASTM C 1325, with manufacturer's standard edges.

1. Thickness: 1/2 inch or 5/8 inch to match existing.
2. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. L-Bead: L-shaped; exposed long flange receives joint compound.
 - d. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - e. Expansion (control) joint.

B. Exterior Trim: ASTM C 1047.

1. Material: Hot-dip galvanized-steel sheet, plastic, or rolled zinc.
2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

2.6 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 1. Interior Gypsum Board: Paper.
 2. Exterior Gypsum Soffit Board: Paper.
 3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
 4. Tile Backing Panels: As recommended by panel manufacturer.
- C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
 1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
 5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.
- D. Joint Compound for Exterior Applications:
 1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
 2. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.
- E. Joint Compound for Tile Backing Panels:
 1. Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.
 2. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.7 AUXILIARY MATERIALS

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

- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
 - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 - 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- C. Sound-Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- D. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

2.8 TEXTURE FINISHES

- A. Primer: As recommended by textured finish manufacturer.
- B. Polystyrene Aggregate Ceiling Finish: Water-based, job-mixed, polystyrene aggregate finish with flame-spread and smoke-developed indexes of not more than 25 when tested according to ASTM E 84.
 - 1. Texture: [**Fine**] [**Medium**] [**Coarse**].
- C. Aggregate Finish: Water-based, job-mixed, aggregated, drying-type texture finish for spray application.
 - 1. Texture: [**Light spatter**] [**Spatter knock-down**] <Insert texture>.
- D. Non-Aggregate Finish: Premixed, vinyl texture finish for spray application.
 - 1. Texture: [**Orange peel**] [**Spatter**] [**Spatter knock-down**] <Insert texture>.
- E. Acoustical Finish: Water-based, chemical-setting or drying-type, job-mixed texture finish for spray application.
 - 1. Application Thickness: [**1/2 inch**] <Insert dimension>.
 - 2. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: **25** or less.
 - b. Smoke-Developed Index: [**50**] [**450**] <Insert value> or less.
 - 3. NRC: **0.55** according to ASTM C 423.

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS

- A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- B. Comply with ASTM C 840.
- C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- D. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- E. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- F. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- G. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 4: At all panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
- H. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
- I. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.
- J. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.2 APPLYING TEXTURE FINISHES

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture matching approved mockup and free of starved spots or other evidence of thin application or of application patterns.

3.3 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 092900

SECTION 093013 - CERAMIC TILING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Ceramic mosaic tile.
2. Quarry tile.
3. Pressed floor tile.
4. Porcelain tile.
5. Glazed wall tile.
6. Stone thresholds.
7. Waterproof membrane for thinset applications.
8. Metal edge strips.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples:

1. Each type and composition of tile and for each color and finish required. For ceramic mosaic tile in color blend patterns, provide samples of each color blend.
2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required.
3. Stone thresholds.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide Standard-grade tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.

2.2 TILE PRODUCTS

A. Ceramic Tile Schedule:

KC North Community Center

1. 6B-CT-01: Match existing 12" x 12" floor tile and 6" x 12" base (rooms 114 & 115).
2. 6B-CT-02: Match existing 12"x12" wainscot (rooms 114 & 115).
3. 6B-CT-03: Match existing 3"x12" decorative bullnose at top of wainscot (rooms 114 & 115).
4. 6B-CT-04: New 12"x12" wall tile to match existing (rooms 129 & 130).
5. 6B-CT-05: New 12"x12" floor tile to match existing (rooms 129 & 130).

2.3 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.
- B. Marble Thresholds: ASTM C 503/C 503M, with a minimum abrasion resistance of [10] [12] according to ASTM C 1353 or ASTM C 241/C 241M and with honed finish.
 1. Description: Uniform, fine- to medium-grained white stone with gray veining.

2.4 SETTING MATERIALS

- A. Latex-Portland Cement Mortar (Thinset): ANSI A118.4.
 1. Manufacturers: available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Bostik, Inc.
 - b. Laticrete International
 - c. MAPEI Corporation
 - d. Southern Grouts
 - e. Summitville Tiles
 2. Provide prepackaged, dry-mortar mix to which only water must be added at Project site.
 3. For wall applications, provide nonsagging mortar.

2.5 GROUT MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10, consisting of white or gray cement and white or colored aggregate as required to produce color to match existing.

2.6 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; stainless-steel, ASTM A 666, 300 Series exposed-edge material.
 - 1. Manufacturers: available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Blanke Corporation
 - b. Ceramic Tool Company
 - c. Schluter Systems

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
 - 2. Verify that concrete substrates for tile floors installed with adhesives bonded mortar bed or thinset mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives or thinset mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 CERAMIC TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Where accent tile differs in thickness from field tile, vary setting bed thickness so that tiles are flush.
- F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
- G. Joint Widths: Unless otherwise indicated, install tile with joint widths to match existing.
- H. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- I. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
 - 1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thinset).
 - 2. Do not extend cleavage membrane waterproofing or crack isolation membrane under thresholds set in dry-set portland cement or latex-portland cement mortar. Fill joints between such thresholds and adjoining tile set on cleavage membrane waterproofing or crack isolation membrane with elastomeric sealant.
- J. Metal Edge Strips: Install where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with or below top of tile and no threshold is indicated.

- K. Install panels and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated. Use latex-portland cement mortar for bonding material unless otherwise directed in manufacturer's written instructions.
- L. Install waterproofing to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness that is bonded securely to substrate.
- M. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.

END OF SECTION 093013

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.3 CLOSEOUT SUBMITTALS

- A. Maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
 - 2. Smoke-Developed Index: 450 or less.

2.2 ACOUSTICAL PANEL CEILINGS, GENERAL

- A. Glass-Fiber-Based Panels: Made with binder containing no urea formaldehyde.
- B. Acoustical Panel Standard: Comply with ASTM E 1264.
- C. Metal Suspension System Standard: Comply with ASTM C 635.
- D. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

2.3 ACOUSTICAL PANELS

A. Manufacturers

1. Armstrong World Industries
2. United States Gypsum Company

B. Basis of Design: Armstrong Fine Fissured Angled Tegular (or square edge to match existing).

C. Classification: High Acoustics

D. Color: White

E. LR: 0.85.

F. NRC: 0.70, Type E-400 mounting according to ASTM E 795.

G. CAC: 35.

H. Edge/Joint Detail: Square or reveal sized to fit flange of exposed suspension-system members to match existing condition

I. Thickness: 3/4 inch.

J. Modular Size: 24 by 24 inches or 24 by 48 inches as indicated on Drawings or to match existing.

2.4 METAL SUSPENSION SYSTEM

A. Manufacturers

1. Armstrong World Industries
2. CertainTeed Corporation
3. Chicago Metallic Corporation
4. United States Gypsum Company

B. Narrow-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 (Z90) coating designation; with prefinished 15/16-inch- wide metal caps on flanges.

1. Structural Classification: Intermediate-duty system.
2. End Condition of Cross Runners: butt-edge type.
3. Face Design: Flat, flush.
4. Cap Material: Steel cold-rolled sheet.
5. Cap Finish: Painted white

C. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.
 - 1. Arrange directionally patterned acoustical panels to match existing conditions.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Resilient base.
 2. Resilient stair accessories.
 3. Resilient molding accessories.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, not less than 12 inches long.

PART 2 - PRODUCTS

2.1 THERMOPLASTIC-RUBBER BASE

- A. Manufacturers:
1. Armstrong World Industries
 2. Burke Mercer Flooring
 3. Flexco
 4. Johnsonite
 5. Mondo
 6. Nora Systems
 7. Robbe Corporation
 8. VPI Corporation
- B. Product Standard: ASTM F 1861, Type TP (rubber, thermoplastic).
1. Group: I solid, homogeneous.
 2. Style and Location:
 - a. Style B, Cove.
- C. Thickness: 0.125 inch.
- D. Height: 4 inches (6 inches in Toilets).
- E. Lengths: Coils in manufacturer's standard length.

- F. Outside Corners: Job formed.
- G. Inside Corners: Job formed.
- H. Colors: As selected by Architect from full range of industry colors.

2.2 RUBBER STAIR ACCESSORIES

- A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.
- B. Manufacturers:
 - 1. Armstrong World Industries
 - 2. Burke Mercer Flooring
 - 3. Flexco
 - 4. Johnsonite
 - 5. Mondo
 - 6. Nora Systems
 - 7. Robbe Corporation
 - 8. VPI Corporation
- C. Stair Treads: ASTM F 2169.
 - 1. Type: TP (rubber, thermoplastic).
 - 2. Class: 2 (pattern; embossed, grooved, or ribbed).
 - 3. Group: 1 (embedded abrasive strips).
 - 4. Nosing Style: Square, adjustable to cover angles between 60 and 90 degrees.
 - 5. Nosing Height: 1-1/2 inches.
 - 6. Thickness: 1/4 inch and tapered to back edge.
 - 7. Size: Lengths and depths to fit each stair tread in one piece.
 - 8. Integral Risers: Smooth, flat; in height that fully covers substrate.
- D. Landing Tile: Matching treads; produced by same manufacturer as treads and recommended by manufacturer for installation with treads.
- E. Locations: Provide rubber stair accessories in areas indicated.
- F. Colors and Patterns: As selected by Architect from full range of industry colors.

2.3 RUBBER MOLDING ACCESSORY

- A. Manufacturers:
 - 1. Armstrong World Industries
 - 2. Burke Mercer Flooring
 - 3. Flexco
 - 4. Johnsonite
 - 5. Mondo

6. Nora Systems
 7. Roppe Corporation
 8. VPI Corporation
- B. Description: Rubber carpet bar for tackless installations, carpet edge for glue-down applications, nosing for carpet, nosing for resilient flooring, reducer strip for resilient flooring, joiner for tile and carpet, or transition strips.
- C. Profile and Dimensions: As required.
- D. Locations: Provide rubber molding accessories in areas indicated.
- E. Colors and Patterns: As selected by Architect from full range of industry colors.
- F. Resilient Base Schedule: NOTE: Base provided as a match existing to be installed in entire room new base is located. Remove all existing base and provide new base all around entire room.

Hillcrest Community Center

1. 6A-WB-01: Roppe 100 Black or equal to match existing.

KC North Community Center

1. 6B-WB-01: Roppe 100 Black or equal to match existing.
2. 6B-WB-02: Match existing dark grey base at door.

Tony Aguirre Community Center

1. 6C-WB-01: match existing light beige.

Brush Creek Community Center

1. 6D-WB-01: Johnsonite 107 Neutrality or equal to match existing tan.
2. 6D-WB-02: Johnsonite 59 Heather Green or equal to match existing green.

2.4 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.
- C. Stair-Tread Nose Filler: Two-part epoxy compound recommended by resilient stair-tread manufacturer to fill nosing substrates that do not conform to tread contours.
- D. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient stair-tread manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F 710.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
 - 3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
 - 4. Moisture Testing: Proceed with installation only after substrates pass testing according to manufacturer's written recommendations, but not less stringent than the following:
 - a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
 - b. Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have maximum 75 percent relative humidity level.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install resilient products until they are the same temperature as the space where they are to be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.2 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.

- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.
- H. Job-Formed Corners:
 - 1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches in length.
 - a. Form without producing discoloration (whitening) at bends.
 - 2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches in length.
 - a. Miter or cope corners to minimize open joints.

3.3 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Stair Accessories:
 - 1. Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
 - 2. Tightly adhere to substrates throughout length of each piece.
 - 3. For treads installed as separate, equal-length units, install to produce a flush joint between units.
- C. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 096513

SECTION 096519 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Vinyl composition floor tile.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: Full-size units of each color and pattern of floor tile required.

1.3 CLOSEOUT SUBMITTALS

A. Maintenance data.

PART 2 - PRODUCTS

2.1 VINYL COMPOSITION FLOOR TILE

A. Manufacturers:

1. Armstrong World Industries
2. Congoleum
3. Mannington Mills
4. Tarkett, Inc.

B. Tile Standard: ASTM F 1066, Class 2, through-pattern tile.

C. Wearing Surface: Smooth.

D. Thickness: 0.125 inch.

E. Size: 12 by 12 inches.

F. Colors and Patterns: As selected by Architect from full range of industry colors.

G. Resilient Tile Schedule:

KC North Community Center

1. 6B-VCT-01: Match existing white fleck VCT.

Tony Aguirre Community Center

1. 6C-VCT-01: Match existing white fleck VCT.

2.2 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
- C. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates: Prepare according to ASTM F 710.
 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by floor tile manufacturer. Do not use solvents.
 3. Alkalinity and Adhesion Testing: Perform tests recommended by floor tile manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
 4. Moisture Testing: Proceed with installation only after substrates pass testing according to floor tile manufacturer's written recommendations, but not less stringent than the following:
 - a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
 - b. Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level.
- C. Access Flooring Panels: Remove protective film of oil or other coating using method recommended by access flooring manufacturer.
- D. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

- E. Do not install floor tiles until they are the same temperature as the space where they are to be installed.
- F. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient floor tile.

3.2 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
 - 1. Lay tiles square with room axis.
- C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
 - 1. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern) or match existing pattern.
- D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.
- G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
- H. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.3 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting floor tile.
- B. Floor Polish: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish.
 - 1. Apply three coat(s).

- C. Cover floor tile until Substantial Completion.

END OF SECTION 096519

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on interior and exterior substrates.
 - 1. Steel.
 - 2. Galvanized metal.
 - 3. Wood.
 - 4. Gypsum board.

1.2 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples: For each type of paint system and in each color and gloss of topcoat.
- C. Product List: For each product indicated. Include printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: 5 percent, but not less than 1 gallon of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide product listed in other Part 2 articles or approved equal for the paint category indicated.

2.2 PAINT, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

- B. Material Compatibility:

- 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

- C. Colors: As selected by Architect from manufacturer's full range to match existing.

- 1. Hillcrest Community Center

- a. 6A-PT-01: Match existing white on CMU.
- b. 6A-PT-02: Match existing brown at door frame.
- c. 6A-PT-03: Match existing green.
- d. 6A-PT-04: Match existing green at exterior handrail.

- 2. KC North Community Center

- a. 6B-PT-01: Match existing black on door frame.
- b. 6B-PT-02: Match existing beige wall paint.
- c. 6B-PT-03: Match existing green wall paint.
- d. 6B-PT-04: Match existing white wall paint.

- 3. Tony Aguirre Community Center

- a. 6C-PT-01: Match existing orange on CMU.
- b. 6C-PT-02: Match existing blue at door frame.
- c. 6C-PT-03: Match existing green on CMU.
- d. 6C-PT-04: Match existing PPG 221-5 "Brown Sugar" on handrails.
- e. 6C-PT-05: Match existing beige on CMU.

4. Brush Creek Community Center
 - a. 6B-PT-01: Match existing beige on CMU.
 - b. 6B-PT-02: Match existing white on CMU.
 - c. 6B-PT-03: Match existing brown on CMU.
 - d. 6B-PT-04: Match existing green on HM frame.
 - e. 6B-WD-01: natural finish on wood doors.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 1. Concrete: 12 percent.
 2. Masonry (Clay and CMU): 12 percent.
 3. Wood: 15 percent.
 4. Gypsum Board: 12 percent.
 5. Plaster: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Application of coating indicates acceptance of surfaces and conditions.
 2. When painting an existing surface, paint entire wall, etc., to the nearest inside or outside corner.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 CLEANING AND PROTECTION

- A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 INTERIOR PAINTING SCHEDULE

- A. Gypsum Board Ceilings: Provide the following finish systems over interior gypsum board surfaces:
 1. Two finish coats over a primer.
 - a. Preparation: Remove all dirt, grime and all other forms of contamination.
 - b. Primer: PPG 6-2 Speedhide Interior Quick-Drying Latex Primer: Applied at a dry film thickness of not less than 1.0 mil.
 - c. Finish: PPG 12-110 Speedhide Pro EV Flat Latex: Applied at a dry film thickness of not less than 1.2 mils per coat.
- B. Gypsum Board Walls: Provide the following finish systems over interior gypsum board surfaces:
 1. Two finish coats over a primer.
 - a. Preparation: Remove all dirt, grime and all other forms of contamination.
 - b. Primer: PPG 6-2 Speedhide Interior Quick-Drying Latex Primer: Applied at a dry film thickness of not less than 1.0 mil.
 - c. Finish: PPG 6-411 Speedhide Interior Enamel Latex Eggshell: Applied at a dry film thickness of not less than 1.5 mils per coat.

- C. Gypsum Board Walls - Restrooms: Provide the following finish systems over interior gypsum board surfaces:
1. Two finish coats over a primer.
 - a. Preparation: Remove all dirt, grime and all other forms of contamination.
 - b. Primer: PPG 17-921 Seal Grip Interior/Exterior Acrylic Primer: Applied at a dry film thickness of not less than 1.6 mils.
 - c. Finish: PPG 16-310 Pitt-Glaze WB1 Interior Eggshell Pre-Catalyzed Water-Borne Acrylic Epoxy: Applied at a dry film thickness of not less than 1.5 to 3.0 mils per coat.
- D. New wood trim, cabinets, or wooden doors with painted finish: Provide the following finish systems over new interior wood trim with less than 12% moisture content as measured by a moisture meter approved by the Architect.
1. Two finish coats over a primer.
 - a. Preparation: Sand smooth and wipe clean to remove all dirt, grime and all other forms of contamination.
 - b. Primer: PPG 17-921 Seal Grip Interior/Exterior Acrylic Primer: Applied at a dry film thickness of not less than 1.6 mils.
 - c. Finish: PPG 6-1510 SpeedHide Interior/Exterior WB Alkyd Semi-Gloss: Applied at a dry film thickness of not less than 1.4 to 1.6 mils per coat.
- E. New wood trim, cabinets, or wooden doors with clear finish: Provide the following finish systems over new interior wood trim with less than 12% moisture content as measured by a moisture meter approved by the Architect.
1. Two finish coats over one stain coat.
 - a. Preparation: Lightly sand with the grain of the wood using progressing grits of sandpaper until a smooth surface free of defects is achieved. Stir thoroughly, but do not shake. Sand lightly with fine sandpaper between coats to insure a smooth finish. Do not use steel wool.
 - b. Apply one coat of Olympic 41533 Series Premium Interior Oil Based Wood Stain, color selected by Architect to match existing. Apply with a clean cloth, brush, sponge, roller, paint pad or by spray equipment.
 - c. Finish: PPG Deft Interior Oil Based Polyurethane Satin: Applied at a dry film thickness of not less than 1.3 mils per coat (Apply three coats to interior floor applications).
- F. Ferrous Metal: Provide the following finish system over ferrous metal:
1. Two finish coats over primer.

- a. Preparation: Remove all loose mill scale, rust and corrosion deposits and any other forms of contamination.
 - b. Primer: PPG 90-712 Pitt-Tech Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 2.0 to 3.0 mils.
 - c. Finish: PPG 90-474 Pitt-Tech Interior/Exterior High Performance Waterborne Satin DTM Industrial Enamels: Applied at a dry film thickness of not less than 2.0 to 3.0 mils per coat.
- G. Concrete Masonry Units: Provide the following system over CMU:
1. Two finish coats over block filler.
 - a. Block Filler: PPG 4-100 Perma-Crete LTC Concrete Block & Masonry Surfacer/Filler: Applied at a dry film thickness of not less than 9.3 to 11.6 mils.
 - b. Finish: PPG 4-22 Perma-Crete High Build 100% Acrylic Topcoat: Applied at a dry film thickness of not less than 3.2 to 5.8 mils per coat.

3.6 EXTERIOR PAINTING SCHEDULE

- A. Ferrous Metal: Provide the following finish system over ferrous metal:
1. Two coats over a primer.
 - a. Preparation: Commercial blast all steel to prepare for primer.
 - b. Primer: PPG Pitt-Guard DTR Epoxy Mastic Coating: Applied at a dry film thickness of 4.0-7.0 mils.
 - c. Finish: PPG Pitt-Thane Ultra Gloss Urethane Enamel: Applied at a dry film thickness of 2.0-3.0 mils per coat.
- B. New wood trim or wooden doors with painted finish: Provide the following finish systems over new interior wood trim with less than 12% moisture content as measured by a moisture meter approved by the Architect.
1. Two finish coats over a primer.
 - a. Preparation: Sand smooth and wipe clean to remove all dirt, grime and all other forms of contamination.
 - b. Primer: PPG 17-921 Seal Grip Interior/Exterior Acrylic Primer: Applied at a dry film thickness of not less than 1.6 mils.
 - c. Finish: PPG 6-1510 SpeedHide Interior/Exterior WB Alkyd Semi-Gloss: Applied at a dry film thickness of not less than 1.4 to 1.6 mils per coat.

City of Kansas City, Missouri
ADA Compliance Project

Bid Package #6
Project # 07061111

END OF SECTION 099123

PAINTING

099100 - 7

SECTION 102119 - PLASTIC TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes solid-plastic toilet compartments configured as toilet enclosures and urinal screens.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For toilet compartments. Include plans, elevations, sections, details, and attachment details.
- C. Samples for each type of toilet compartment material indicated.

1.3 CLOSEOUT SUBMITTALS

- A. Maintenance data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 450 or less.
- A. Regulatory Requirements: Comply with applicable provisions in 2010 ADA Standards for Accessible Design and ICC A117.1 for toilet compartments designated as accessible.

2.2 SOLID-PLASTIC TOILET COMPARTMENTS

- A. Manufacturers:
 - 1. Accurate Partitions Corporation
 - 2. All American Metal Corporation
 - 3. Bradley Corporation
 - 4. General Partitions Mfg.
 - 5. Global Partitions

6. Hadrian Manufacturing
 7. Metpar Corporation
 8. Scranton Products
- B. Toilet-Enclosure Style: Overhead braced.
- C. Urinal-Screen Style: Wall hung.
- D. Door, Panel, and Pilaster Construction: Solid, high-density polyethylene (HDPE) panel material, not less than 1 inch thick, seamless, with eased edges, and with homogenous color and pattern throughout thickness of material.
1. Integral Hinges: Configure doors and pilasters to receive integral hinges.
 2. Heat-Sink Strip: Manufacturer's standard continuous, stainless-steel strip fastened to exposed bottom edges of solid-plastic components to hinder malicious combustion.
 3. Color and Pattern:
 - a. KC North Community Center
 - 1) 6B-TP-01: match existing beige plastic in 114 & 115.
 - b. Brush Creek Community Center
 - 1) 6D-TP-01: relocate existing tan plastic.
- E. Pilaster Shoes and Sleeves (Caps): Manufacturer's standard design; stainless steel.
- F. Brackets (Fittings):
1. Stirrup Type: Ear or U-brackets, chrome-plated zamac.

2.3 HARDWARE AND ACCESSORIES

- A. Hardware and Accessories: Manufacturer's standard operating hardware and accessories.
1. Material: Chrome-plated zamac.
 2. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.
- B. Hardware and Accessories: Manufacturer's heavy-duty stainless-steel operating hardware and accessories.
1. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.
- C. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with antigrip profile and in manufacturer's standard finish.
- D. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, finished to match the items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless-steel, hot-dip galvanized-steel, or other rust-resistant, protective-coated steel compatible with related materials.

2.4 FABRICATION

- A. Fabrication, General: Fabricate toilet compartment components to sizes indicated. Coordinate requirements and provide cutouts for through-partition toilet accessories where required for attachment of toilet accessories.
- B. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.
- C. Floor-Anchored Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts at pilasters for structural connection to floor. Provide shoes at pilasters to conceal anchorage.
- D. Ceiling-Hung Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts at pilasters for connection to structural support above finished ceiling. Provide assemblies that support pilasters from structure without transmitting load to finished ceiling. Provide sleeves (caps) at tops of pilasters to conceal anchorage.
- E. Floor-and-Ceiling-Anchored Units: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts at tops and bottoms of pilasters. Provide shoes and sleeves (caps) at pilasters to conceal anchorage.
- F. Urinal-Screen Posts: Provide manufacturer's standard corrosion-resistant anchoring assemblies with leveling adjustment nuts at tops and bottoms of posts. Provide shoes and sleeves (caps) at posts to conceal anchorage.
- G. Door Size and Swings: Unless otherwise indicated, provide 24-inch- wide, in-swinging doors for standard toilet compartments and 36-inch- wide, out-swinging doors with a minimum 32-inch- wide, clear opening for compartments designated as accessible.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
 - 1. Maximum Clearances:
 - a. Pilasters and Panels: 1/2 inch.
 - b. Panels and Walls: 1 inch.
 - 2. Stirrup Brackets: Secure panels to walls and to pilasters with no fewer than two brackets attached near top and bottom of panel.
 - a. Locate wall brackets so holes for wall anchors occur in masonry or tile joints.
 - b. Align brackets at pilasters with brackets at walls.

3. Full-Height (Continuous) Brackets: Secure panels to walls and to pilasters with full-height brackets.
 - a. Locate bracket fasteners so holes for wall anchors occur in masonry or tile joints.
 - b. Align brackets at pilasters with brackets at walls.

3.2 ADJUSTING

- A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

END OF SECTION 102119

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Public-use washroom accessories.
2. Underlavatory guards.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: Full size, for each exposed product and for each finish specified.

1.3 INFORMATIONAL SUBMITTALS

- A. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.5 WARRANTY

- A. Manufacturer's Special Warranty for Mirrors: Manufacturer agrees to repair or replace mirrors that fail in materials or workmanship within specified warranty period.
1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 PUBLIC-USE WASHROOM ACCESSORIES

- A. Waste Receptacle:

1. Manufacturers:
 - a. American Specialties, Inc.
 - b. Bobrick Washroom Equipment
 - c. Bradley Corporation
 - d. GAMCO Specialty Accessories
 2. Mounting: Surface mounted.
 3. Minimum Capacity: 20 gal..
 4. Material and Finish: Stainless steel, No. 4 finish (satin).
 5. Liner: Reusable vinyl liner.
 6. Lockset: Tumbler type for waste receptacle.
- B. Grab Bar:
1. Manufacturers:
 - a. American Specialties, Inc.
 - b. Bobrick Washroom Equipment
 - c. Bradley Corporation
 - d. GAMCO Specialty Accessories
 2. Mounting: Flanges with concealed fasteners.
 3. Material: Stainless steel, 0.05 inch thick.
 - a. Finish: Smooth, No. 4 finish (satin) on ends and slip-resistant texture in grip area.
 4. Outside Diameter: 1-1/2 inches.
 5. Configuration and Length: As indicated on Drawings.
- C. Mirror Unit:
1. Manufacturers:
 - a. American Specialties, Inc.
 - b. Bobrick Washroom Equipment
 - c. Bradley Corporation
 - d. GAMCO Specialty Accessories
 2. Frame: Stainless-steel angle, 0.05 inch thick.
 - a. Corners: Welded and ground smooth.
 3. Hangers: Produce rigid, tamper- and theft-resistant installation, using method indicated below.
 - a. One-piece, galvanized-steel, wall-hanger device with spring-action locking mechanism to hold mirror unit in position with no exposed screws or bolts.
 - b. Wall bracket of galvanized steel, equipped with concealed locking devices requiring a special tool to remove.
 4. Size: As indicated on Drawings.

D. Coat Hook:

1. Manufacturers:
 - a. American Specialties, Inc.
 - b. Bobrick Washroom Equipment
 - c. Bradley Corporation
 - d. GAMCO Specialty Accessories
2. Description: Single-prong unit.
3. Material and Finish: Stainless steel, No. 4 finish (satin)

2.3 UNDERLAVATORY GUARDS

A. Underlavatory Guard:

1. Manufacturers:
 - a. Plumberex Specialty Products
 - b. Truebro by IPS Corporation
2. Description: Insulating pipe covering for supply and drain piping assemblies that prevents direct contact with and burns from piping; allow service access without removing coverings.
3. Material and Finish: Antimicrobial, molded plastic, white.

2.4 FABRICATION

- A. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Grab Bars: Install to withstand a downward load of at least 250 lb, when tested according to ASTM F 446.

END OF SECTION 102800

SECTION 105113 - METAL LOCKERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Knocked-down corridor lockers.
 - 2. Locker benches.

1.2 ACTION SUBMITTALS

- A. Product data.
- B. Shop Drawings: Include plans, elevations, sections, details, attachments to other work, and locker identification system and numbering sequence.
- C. Samples: For each color specified.

1.3 INFORMATIONAL SUBMITTALS

- A. Sample warranties.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.5 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of metal lockers that fail in materials or workmanship, excluding finish, within specified warranty period.
 - 1. Warranty Period for Knocked-Down Metal Lockers: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Accessibility Requirements: For lockers indicated to be accessible, comply with applicable provisions in 2010 ADA Standards for Accessible Design and ICC A117.1.

2.2 KNOCKED-DOWN CORRIDOR LOCKERS

- A. Manufacturers:
1. DeBourgh Mfg. Co.
 2. Hadrian Manufacturing, Inc.
 3. Lyon Workspace Products
 4. Penco Products, Inc.
 5. Republic Storage Systems
- B. Doors: One piece; fabricated from 16 gauge nominal-thickness steel sheet; formed into channel shape with double bend at vertical edges and with right-angle single bend at horizontal edges.
1. Reinforcement: Manufacturer's standard reinforcing angles, channels, or stiffeners for doors more than 15 inches wide; welded to inner face of doors.
 2. Stiffeners: Manufacturer's standard full-height stiffener fabricated from 0.048-inch nominal-thickness steel sheet; welded to inner face of doors.
 3. Door Style: Vented panel as follows:
 - a. Louvered Vents: No fewer than six louver openings at top and bottom for single-tier lockers.
- C. Body: Assembled by riveting or bolting body components together. Fabricate from unperforated steel sheet with thicknesses as follows:
1. Tops, Bottoms, and Intermediate Dividers: 0.024-inch nominal thickness, with single bend at sides.
 2. Backs and Sides: 0.024-inch nominal thickness, with full-height, double-flanged connections.
 3. Shelves: 0.024-inch nominal thickness, with double bend at front and single bend at sides and back.
- D. Frames: Channel formed; fabricated from 0.060-inch nominal-thickness steel sheet; lapped and factory welded at corners; with top and bottom main frames factory welded into vertical main frames. Form continuous, integral, full-height door strikes on vertical main frames.
- E. Hinges:
1. Knuckle Hinges: Steel, full loop, five or seven knuckles, tight pin; minimum 2 inches high. Provide no fewer than three hinges for each door more than 42 inches high.
 2. Continuous Hinges: Manufacturer's standard, steel, full height.
 3. Hinges: Manufacturer's standard, steel, continuous or knuckle type.
- F. Recessed Door Handle and Latch: Stainless-steel cup with integral door pull, recessed so locking device does not protrude beyond door face; pry and vandal resistant.
1. Multipoint Latching: Finger-lift latch control designed for use with built-in combination locks, built-in key locks, or padlocks; positive automatic latching and prelocking.
 - a. Latch Hooks: Equip doors 48 inches and higher with three latch hooks and doors less than 48 inches high with two latch hooks; fabricated from 0.105-inch nominal-

- thickness steel sheet; welded or riveted to full-height door strikes; with resilient silencer on each latch hook.
 - b. Latching Mechanism: Manufacturer's standard, rattle-free latching mechanism.
 - G. Identification Plates: Manufacturer's standard, etched, embossed, or stamped aluminum plates, with numbers and letters at least 3/8 inch high.
 - H. Hooks: Manufacturer's standard ball-pointed type hooks, aluminum or steel; zinc plated.
 - I. Continuous Zee Base: Fabricated from manufacturer's standard thickness, but not less than 0.060-inch nominal-thickness steel sheet.
 - 1. Height: 4 inches.
 - J. Continuous Sloping Tops: Fabricated from manufacturer's standard thickness, but not less than 0.036-inch nominal-thickness steel sheet.
 - 1. Closures: Vertical-end type.
 - K. Recess Trim: Fabricated from 0.048-inch nominal-thickness steel sheet.
 - L. Filler Panels: Fabricated from manufacturer's standard thickness, but not less than 0.036-inch nominal-thickness steel sheet.
 - M. Boxed End Panels: Fabricated from 0.060-inch nominal-thickness steel sheet.
 - N. Finished End Panels: Fabricated from 0.024-inch nominal-thickness steel sheet.
 - O. Center Dividers: Fabricated from 0.024-inch nominal-thickness steel sheet.
 - P. Materials:
 - 1. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B, suitable for exposed applications.
 - 2. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with A60 zinc-iron, alloy (galvannealed) coating designation.
 - Q. Finish: Baked enamel or powder coat.
 - 1. Color: As selected by Architect from manufacturer's full range to match existing.
- 2.3 ACCESSIBLE LOCKER BENCHES
- A. Provide bench units with overall assembly seat height of 18 inches.
 - B. Bench Tops: Manufacturer's standard one-piece units, with rounded corners and edges.
 - 1. Size: Minimum 20 inches wide by 42 inches long by 1-1/4 inches thick for all accessible benches
 - 2. Laminated clear hardwood with one coat of clear sealer on all surfaces and one coat of clear lacquer on top and sides.

- C. Bench Backs: Where required, backs to match bench top materials.
 - 1. Size: Minimum 18 inches wide by 42 inches long by 1-1/4 inches thick.
 - 2. Provide 3 backrest braces and hardware to attach back to seat.
- D. Fixed Pedestals: Manufacturer's standard tubular steel supports, with predrilled fastener holes for attaching bench top and anchoring to floor, complete with fasteners and anchors.
 - 1. Color: As selected by Architect from manufacturer's full range.
- E. Materials:
 - 1. Stainless Steel: ASTM A 666, Type 304.
 - 2. Steel Tube: ASTM A 500/A 500 M, cold rolled.
 - 3. Particleboard: ANSI A208.1, Grade M-2.

2.4 FABRICATION

- A. Fabricate metal lockers square, rigid, without warp, and with metal faces flat and free of dents or distortion. Make exposed metal edges safe to touch and free of sharp edges and burrs.
- B. Fabricate each metal locker with an individual door and frame; individual top, bottom, and back; and common intermediate uprights separating compartments. Factory weld frame members of each metal locker together to form a rigid, one-piece assembly.
- C. Equipment: Provide each locker with an identification plate and the following equipment:
 - 1. Single-Tier Units: Shelf, one double-prong ceiling hook, and two single-prong wall hooks.
- D. Knocked-Down Construction: Fabricate metal lockers using nuts, bolts, screws, or rivets for nominal assembly at Project site.
- E. Accessible Lockers: Fabricate as follows:
 - 1. Locate bottom shelf no lower than 15 inches above the floor.
 - 2. Where hooks and additional shelves are provided, locate no higher than 48 inches above the floor.
 - 3. Provide universal symbol of accessibility on each locker.
- F. Continuous Base: Formed into channel or zee profile for stiffness, and fabricated in lengths as long as practical to enclose base and base ends of metal lockers; finished to match lockers.
- G. Continuous Sloping Tops: Fabricated in lengths as long as practical, without visible fasteners at splice locations; finished to match lockers.
- H. Recess Trim: Fabricated with minimum 2-1/2-inch face width and in lengths as long as practical; finished to match lockers.
- I. Filler Panels: Fabricated in an unequal leg angle shape; finished to match lockers. Provide slip-joint filler angle formed to receive filler panel.

- J. Boxed End Panels: Fabricated with 1-inch- wide edge dimension, and designed for concealing fasteners and holes at exposed ends of nonrecessed metal lockers; finished to match lockers.
- K. Finished End Panels: Designed for concealing unused penetrations and fasteners, except for perimeter fasteners, at exposed ends of nonrecessed metal lockers; finished to match lockers.
- L. Center Dividers: Full-depth, vertical partitions between bottom and shelf; finished to match lockers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install lockers level, plumb, and true; shim as required, using concealed shims.
 - 1. Anchor locker runs at ends and at intervals recommended by manufacturer, but not more than 36 inches o.c. Using concealed fasteners, install anchors through backup reinforcing plates, channels, or blocking as required to prevent metal distortion.
 - 2. Anchor single rows of metal lockers to walls near top and bottom of lockers.
 - 3. Anchor back-to-back metal lockers to floor.
- B. Knocked-Down Lockers: Assemble with standard fasteners, with no exposed fasteners on door faces or face frames.
- C. Trim: Fit exposed connections of trim, fillers, and closures accurately together to form tight, hairline joints, with concealed fasteners and splice plates.
 - 1. Attach recess trim to recessed metal lockers with concealed clips.
 - 2. Attach filler panels with concealed fasteners.
 - 3. Attach sloping-top units to metal lockers, with closures at exposed ends.

END OF SECTION 105113

SECTION 22 1116 – DOMESTIC WATER PIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Pipe, pipe fittings, valves, and connections for piping systems.
 - 1. Domestic water.

1.2 REFERENCES

- A. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers; 2001 (R2005) (ANSI B16.18).
- B. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers; 2001 (R2005).
- C. ASME B31.9 - Building Services Piping; The American Society of Mechanical Engineers; 2008 (ANSI/ASME B31.9).
- D. ASTM B 32 - Standard Specification for Solder Metal; 2008.
- E. ASTM B 88 - Standard Specification for Seamless Copper Water Tube; 2009.
- F. ASTM B 88M - Standard Specification for Seamless Copper Water Tube (Metric); 2005.
- G. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.; 1996.

1.3 SUBMITTALS

- A. Product Data: Provide data on pipe materials and pipe fittings. Provide manufacturers catalog information.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- B. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 - PRODUCTS

2.1 WATER PIPING, ABOVE GRADE

- A. Copper Tube: ASTM B 88 (ASTM B 88M), Type K (B), Drawn (H).
 - 1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.

2. Joints: ASTM B 32, alloy Sn95 solder.

2.3 PIPE HANGERS AND SUPPORTS

- A. Plumbing Piping - Water:
 1. Conform to ASME B31.9.
 2. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.
 3. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
 4. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
 5. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

2.4 BALL VALVES

- A. Construction, 4 Inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze, two piece body, chrome plated brass ball, regular port, teflon seats and stuffing box ring, blow-out proof stem, lever handle, solder ends with union.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that existing fixtures and conditions are functioning properly. Verify that existing water pressures are within the required ranges of the faucets and flush valves specified.

3.2 PREPARATION

- A. Remove scale and dirt, on inside and outside, before assembly.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- C. Install piping to maintain headroom, conserve space, and not interfere with use of space.

END OF SECTION 22 1116

SECTION 22 1316 – SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Pipe, pipe fittings and connections for the following piping systems.
 - 1. Sanitary drains
 - 2. Vent piping.

1.2 REFERENCES

- A. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; The American Society of Mechanical Engineers; 2005.
- B. ASME B16.3 - Malleable Iron Threaded Fittings; The American Society of Mechanical Engineers; 1998 (R2006)..
- C. ASME B31.9 - Building Services Piping; The American Society of Mechanical Engineers; 2004 (ANSI/ASME B31.9).
- D. ASTM A 74 - Standard Specification for Cast Iron Soil Pipe and Fittings; 2006.
- E. ASTM C 564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings; 2003a.
- F. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems; American Water Works Association; 2005 (ANSI/AWWA C105/A21.5).
- G. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications; Cast Iron Soil Pipe Institute; 2005.
- H. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; Cast Iron Soil Pipe Institute; 2004.
- I. MSS SP-58 - Pipe Hangers and Supports - Materials, Design and Manufacture; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.; 2002.
- J. MSS SP-69 - Pipe Hangers and Supports - Selection and Application; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.; 2003.
- K. MSS SP-89 - Pipe Hangers and Supports - Fabrication and Installation Practices; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.; 2003.

1.3 SUBMITTALS

- A. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- B. Project Record Documents: Record actual locations of valves.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.
- B. Provide temporary protective coating on cast iron and steel valves.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.
- D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 - PRODUCTS

2.1 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A. Cast Iron Pipe: ASTM A 74 extra heavy weight, hub-and-spigot type.
 - 1. Fittings: Cast iron in accordance with ASTM A 74.
 - 2. Joints: Compression type joints, allowing up to 5 degrees of deflection without leakage or failure.
 - 3. Joint Seals: ASTM C 564 rubber/neoprene gaskets.

2.2 SANITARY SEWER PIPING, ABOVE GRADE IN BUILDING

- A. Cast Iron Pipe: ASTM A 74, service weight, hub-and-spigot type.
 - 1. Fittings: Cast iron in accordance with ASTM A 74.
 - 2. Joints: Compression type joints, allowing up to 5 degrees of deflection without leakage or failure, or caulked joints using lead and oakum.
 - 3. Joint Seals: ASTM C 564 rubber/neoprene gaskets, or lead and oakum.
- B. Cast Iron Pipe: CISPI 301, ASTM A 888, hubless, service weight type.
 - 1. Fittings: CISPI 301 cast iron fittings.
 - 2. Joints: Standard no-hub couplings made in accordance with CISPI 310 with one-piece neoprene elastomer sealing sleeves and stainless steel clamp-and-shield assemblies.

2.3 SANITARY WASTE VENT PIPING, ABOVE GRADE IN BUILDING

- A. Cast Iron Pipe: CISPI 301, ASTM A 888, hubless, service weight type.
 - 1. Fittings: CISPI 301 cast iron fittings.
 - 2. Joints: Standard no-hub couplings made in accordance with CISPI 310 with one-piece neoprene elastomer sealing sleeves and stainless steel clamp-and-shield assemblies.

2.6 PIPE HANGERS AND SUPPORTS

- A. Plumbing Piping - Drain, Waste, and Vent:
 - 1. Conform to ASME B31.9.
 - 2. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.
 - 3. Hangers for Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
 - 4. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
 - 5. Wall Support for Pipe Sizes 4 Inches and Over: Welded steel bracket and wrought steel clamp.

6. Vertical Support: Steel riser clamp.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

3.2 PREPARATION

- A. Remove all sharp edges from cast iron pipe that has been cut in the field.
- B. Ream pipe and tube ends. Remove burrs.
- C. Remove scale and dirt, on inside and outside, before assembly.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. For all sanitary waste drain piping, provide at least the minimum required slope in accordance with the 2012 Uniform Plumbing Code.
- C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- E. Group piping whenever practical at common elevations.
- F. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- G. Lubricate compression-type joints in hub-and-spigot piping when lubrication is required or recommended by gasket manufacturer and only use manufacturer's recommended lubricant.
- H. Bands for no-hub couplings shall be tightened to either torque wrench set at 60 in-lb or to manufacturer's recommendations for torque wrench setting when different.
- I. For caulked joints using lead and oakum, follow CISPI recommendations for the quantity of lead and oakum based on pipe size.
- I. Pipe Hangers and Supports:
 1. Install in accordance with ASME B31.9.
 2. Support horizontal piping as scheduled.
 3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
 4. Place hangers within 12 inches of each horizontal elbow.
 5. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
 6. Support vertical piping at every floor. Support riser piping independently of connected horizontal piping.

7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
8. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.
9. Support cast iron drainage piping at every joint.

3.4 APPLICATION

A.

3.5 ERECTION TOLERANCES

- A. Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/4 inch per foot slope.

END OF SECTION 22 1316

SECTION 22 4200 - PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Water closets
- B. Urinals
- C. Lavatories
- D. Kitchen Sinks
- E. Penal-type Lavatory and Toilet Combinations

1.2 REFERENCE STANDARDS

- A. ANSI A117.1-2009 Standard for Accessible and Usable Buildings and Facilities
- B. ASME A112.6.1M-1997 – Floor-Affixed Supports for Off-The-Floor Plumbing Fixtures for Public Use; American Society of Mechanical Engineers; 1997 (Reaffirmed 2012).
- C. ASME A112.18.1 - Plumbing Supply Fittings; American Society of Mechanical Engineers; 2012.
- D. ASME A112.19.2 – Ceramic Plumbing Fixtures; American Society of Mechanical Engineers; 2008.

1.3 SUBMITTALS

- A. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- B. Manufacturer's Instructions: Indicate installation methods and procedures.

PART 2 - PRODUCTS

2.1 WATER CLOSETS, SIPHON JET DESIGN w/FLUSH VALVE

- A. Bowl: Furnish and install the following wall-mounted toilet bowl with siphon jet design and flush valve assembly. The basis of design for the water closet is an American Standard Awall Model 3351.001. The bowl shall be made from vitreous china, be a wall-mounted style with an elongated bowl, bowl opening extends at least 2 inches in front beyond the standard round bowl, and exposed flush valve. The glazed surface of the bowl and the circulation piping shall contain additive to prevent the growth of mold, mildew, algae and fungus. The water closet shall have a 1-½ inch inlet spud and fully glazed 2-1/8-inch trapway. The minimum drain size connection shall be 3 inch. The toilet bowl and flush valve shall be designed to operate at 1.6 gallons/flush. Furnish water closet with open-front seat made for the elongated bowl. The wall-mounted toilet shall be mounted so that the top of the toilet seat, once installed in place, shall be at a height in the range of 17 inches minimum and 19 inches maximum above the finished floor. The water

closet installation shall be complaint with both the Americans with Disabilities Act Guidelines and ANSI A117.1-2009 Standard for Accessible and Usable Buildings and Facilities. The bowl shall meet or exceed the specification requirements of ASME A112.19.2-2008, Ceramic Plumbing Fixtures.

- B. Flush Valve: Exposed chrome-plated flushometer valve compliant with ASME A112.18.1-2012 maximum 1.6 gallons/flush, designed to operate with water pressures in the range from 20 psig to 120 psig, with oscillating non-hold open handle, escutcheon, integral screwdriver operated angle stop, vacuum breaker and adjustable tailpiece. Flush valve shall be ADA-compliant. Flush valve shall have right or left handed options for handle and angle stop locations and be made for connection to 1-½ inch spud connection on toilet bowl and 1 inch water line. Flush valve shall measure 11-½ inches from the top of vitreous china bowl at spud location to centerline of 1 inch water line connection at wall. Flush valve shall have brass piston-type water valve
- C. Seat:
 - 1. Solid white polypropylene, open front type, with hinges and brass bolts for mounting to bowl, without cover. Provide with permanent finish that resists the growth of bacteria mold and mildew.

2.2 WATER CLOSETS, FLOOR-MOUNTED, TANK-TYPE

- A. Bowl: Furnish and install the following floor-mounted, tank-type toilet assembly with pressure-assisted, siphon jet flush action. The basis of design for the water closet is an American Standard Cadet Right Height Model 2467.016. The bowl shall be made from vitreous china, be a floor-mounted style with an elongated bowl, a bowl opening that extends at least 2 inches in front beyond the standard round bowl. The glazed surface of the bowl, tank and the circulation piping shall contain additive to prevent the growth of mold, mildew, algae and fungus. The water closet shall have a fully glazed 2-1/8-inch trapway. The minimum drain size connection shall be 3 inch. The toilet bowl and tank shall be designed to operate at 1.6 gallons/flush. Furnish water closet with open-front seat made for the elongated bowl. The floor-mounted toilet shall have a rim height that will allow the top of the seat to be 17 inches minimum and 19 inches maximum above the finished floor level. The top of the toilet seat, once installed in place, shall be at a height in the range of 17 inches minimum and 19 inches maximum above the finished floor. The water closet installation shall be complaint with both the Americans with Disabilities Act Guidelines and ANSI A117.1-2009 Standard for Accessible and Usable Buildings and Facilities. The bowl shall meet or exceed the specification requirements of ASME A112.19.2-2008, Ceramic Plumbing Fixtures.
- B. Seat:
 - 1. Solid white polypropylene, open front type, with hinges and brass bolts for mounting to bowl, without cover. Provide with permanent finish that resists the growth of bacteria mold and mildew.

2.3 URINALS, SIPHON JET DESIGN w/FLUSH VALVE

- A. Urinal: Furnish and install the following wall-mounted urinal with blowout flush action with integral fully glazed trap, visible trap seal and exposed flush valve assembly. The basis of design for the urinal is an American Standard Lynbrook Model 3351.001. The urinal shall be made from vitreous china, be a wall-mounted style equipped with a flushing rim, privacy side

shields, and with a bowl portion of the urinal that extends at least 13-½ inches from the wall face to the outer face of the rim. The glazed surface of the bowl and the circulation piping shall contain additive to prevent the growth of mold, mildew, algae and fungus. The water closet shall have a 1-¼ inch inlet spud for the flush valve and fully glazed integral trap, capable of passing a ¾" ball, and a 2 inch NPT drain connection. The urinal shall be designed to operate at 1.0 gallons/flush. The wall-mounted urinal shall be mounted so that the top of the outer face of the flushing rim shall measure no more than 17 inches above the finished floor level. The urinal installation shall be complaint with both the Americans with Disabilities Act Guidelines and ANSI A117.1-2009 Standard for Accessible and Usable Buildings and Facilities. The urinal shall meet or exceed the specification requirements of ASME A112.19.2-2008, Ceramic Plumbing Fixtures.

- B. Flush Valve: Exposed chrome-plated flushometer valve compliant with ASME A112.18.1-2012 maximum 1.0 gallons/flush, designed to operate with water pressures in the range from 20 psig to 120 psig, with oscillating non-hold open handle, escutcheon, integral screwdriver operated angle stop, vacuum breaker and adjustable tailpiece. Flush valve shall be ADA-compliant. Flush valve shall have right or left handed options for handle and angle stop locations and be made for connection to 1-¼ inch spud connection on toilet bowl and 1-inch water line. Flush valve shall measure 11 ½ inches from the top of vitreous china bowl at spud location to centerline of 1 inch water line connection at wall. Flush valve shall have brass piston-type water valve.

2.4 LAVATORY – WALL-HUNG TYPE

- A. Furnish and install the following wall-hung lavatory and faucet combination. The basis of design is an American Standard Lucerne Model 0356.015. Lavatory shall be a wall-mounted type made from vitreous china with a D-shaped bowl, front overflow and concealed arms support. Provide lavatory with faucet ledge and faucet holes on 8-inch centers. Furnish lavatory with carrier set in wall. Bowl dimensions shall be 6-½ inch depth, 15 inch width and 10 inch front-to-back. The lavatory shall meet or exceed the specification requirements of ASME A112.19.2-2008, Ceramic Plumbing Fixtures. The lavatory shall be complaint with both the Americans with Disabilities Act Guidelines and ANSI A117.1-2009 Standard for Accessible and Usable Buildings and Facilities. Furnish lavatory and faucet with 1-1/4" chrome-plated drain and trap piping and chrome-plated water lines and water shutoff valves. Drain shall NOT include pop-up drain stopper. Furnish and install closed cell insulation, ½ inch thick, with pre-molded lagging cover for drain and trap piping as well as water line and water shutoff valves.
- B. Lavatory Faucet:
1. Furnish and install chrome-plated, lead-free brass two-handle faucet. The basis of design is an American Standard Monterrey Model 6502.175 or equivalent. Furnish faucet with grid strainer option. Faucet shall be made from cast brass with chrome-plated finish and copper water line connections made for compression fitting couplings. Faucet shall operate with 0.5gpm flow rate. Faucet handles shall be wrist blade type with each handle measuring 3-7/8 inches from center line of handle to end of wrist blade. Furnish new chrome-plated shutoff valves for both hot and cold water supply lines to be installed on exposed face of wall and insulated with closed cell insulation. Furnish and install flexible braided stainless steel hot and cold water lines between shutoff valves and mixing valve. Insulate with

closed cell insulation. Faucet shall be compliant with ASME A112.18.1, Plumbing Supply Fittings.

2.5 LAVATORY – CABINET COUNTERTOP TYPE

- A. Furnish and install the following round countertop lavatory and faucet combination. The basis of design is an American Standard Cadet Round Model 0427.888EC. Lavatory shall be made for mounting in cabinet countertop and be made from vitreous china with a D-shaped bowl and front overflow. Provide lavatory with faucet ledge and faucet holes on 8-inch centers. The glazed surface of the vitreous china bowl shall contain additive to prevent the staining and growth of mold, mildew and bacteria. The lavatory shall be self-rimming with a cutout template supplied. The lavatory shall be a nominal 19-inch round fixture with bowl dimensions that are at least 6-inch depth, 15-inch width and 12-inch front-to-back. The lavatory shall meet or exceed the specification requirements of ASME A112.19.2-2008, Ceramic Plumbing Fixtures. The lavatory shall be complaint with both the Americans with Disabilities Act Guidelines and ANSI A117.1-2009 Standard for Accessible and Usable Buildings and Facilities. Furnish lavatory with 1-1/4" drain and trap piping and water line shutoff valves. Drain shall NOT include pop-up drain stopper.
- B. Lavatory Faucet:
1. Furnish and install chrome-plated, lead-free brass two-handle faucet. The basis of design is an American Standard Monterrey Model 6502.175 or equivalent. Furnish faucet with grid strainer option. Faucet shall be made from cast brass with chrome-plated finish and copper water line connections made for compression fitting couplings. Faucet shall operate with 0.5gpm flow rate. Faucet handles shall be wrist blade type with each handle measuring 3-7/8 inches from center line of handle to end of wrist blade. Furnish new shutoff valves for both hot and cold water supply lines. Furnish and install flexible braided stainless steel hot and cold water lines between shutoff valves and mixing valve. Insulate with closed cell insulation. Faucet shall be compliant with ASME A112.18.1, Plumbing Supply Fittings.

2.6 KITCHEN SINK – CABINET TOP UNDERMOUNT TYPE

- A. Furnish and install the following 2-compartment, undermount-type kitchen sink and faucet combination. The basis of design is an American Standard Prevoir 2-compartment Model 14DB-331900.073 or equivalent. Sink shall be made for mounting in cabinet countertop and be made from minimum 18-gauge stainless steel. The each sink compartment shall have individual bowl dimensions that are at least 9-inch depth, 15-inch width and 17-inch front-to-back.
- B. Sink Faucet:
1. Furnish and install chrome-plated, lead-free brass two-handle faucet. The basis of design is a Chicago Faucets Model 1100-E35VP317ABCP or equivalent. Faucet shall be made from cast brass with chrome-plated finish and copper water line connections made for compression fitting couplings. Hot and cold water faucets shall have 8-inch fixed center spacing. Faucet shall operate with 1.5gpm flow rate. Faucet handles shall be wrist blade type with each handle measuring 4 inches from center line of handle to end of wrist blade. Furnish new shutoff valves for both hot and cold water supply lines. Furnish and install flexible braided stainless steel hot and cold water lines between shutoff valves and mixing valve. Insulate with closed cell insulation. Faucet shall be compliant with ASME A112.18.1, Plumbing Supply Fittings.

2.7 PENAL-TYPE COMBINATION LAVATORY AND TOILET

- A. Furnish and install an Acorn-brand penal-ware lavatory/toilet combination unit, Model No. 1435-FA, or equivalent. Fixture shall be fabricated from 14-gauge, Type 304 stainless steel. Construction shall be seamless welded and exposed surfaces shall have a satin finish. Provide 36" long stainless steel grab bar to be located behind toilet. Grab bar shall be made from heavy gauge Type 304 stainless steel construction, 1-1/2" diameter and 46-3/4" long. Grab bar shall be positioned behind toilet and is field installed to cabinet and wall. Valve shall require less than 5 lbs. to activate. Toilet shall be concealed blowout jet type with an elongated bowl, a self-draining flushing rim, integral contoured seat, and push button flush. Toilet shall meet ASME A112.19.3-2008 and CSA B45.4-2008 requirements and will flush with a minimum of 25 PSI flow pressure when used in conjunction with a minimum of 1.6 GPF. Toilet trap shall have a minimum 3-1/2" seal that shall pass a 2-1/8" diameter ball and be fully enclosed. Cabinet interior is to be sound deadened with fire-resistant material. Fixture shall withstand loadings of 5,000 pounds without permanent damage. Fixture shall be furnished with necessary fasteners for proper installation.

Lavatory oval bowl shall measure 14-3/4" x 9-1/2" with a depth of 4 inches. The intergral lavatory shall be furnished with a standard P-trap waste outlet with 1-1/2" O.D. plain end. The faucet and spout shall be located on the deck to the rear of the bowl with 1.4 gallons/minute push button faucet controls located to the right and/or left of the spout. Faucet and spout shall conform with lead free requirements of NSF61 Section 9, 1997, and Federal Public Law 111-380. Pushbutton faucet control shall require less than 5 lbs. of force to activate the valve and timing for operation shall be between 5 and 60 seconds.

Fixture shall be arranged to be installed onto a finished wall and serviced through removable access panels. Panels shall be secured with vandal resistant fasteners and be located below lavatory section on either side of the cabinet. The cabinet interior shall be sound deadened with fire-resistant insulation material.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
B. Verify that water line and sanitary waste connections are available and of the correct size.

3.2 PREPARATION

- A. Rough-in fixture piping connections in accordance with sizes indicated in plumbing fixture schedules on drawings for the particular fixture.

3.3 INSTALLATION

- A. Install each fixture with trap, easily removable for servicing and cleaning.

- B. Install components level and plumb.

3.4 ADJUSTING

- A. Adjust stops, faucets and flush valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.5 CLEANING

- A. Clean plumbing fixtures and equipment.

END OF SECTION 22 4200

SECTION 22 4713 – DRINKING FOUNTAINS AND WATER COOLERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Recessed, Pressure-Type, Water Coolers with Dual-Height Design
- B. Surface Mounted, Pressure-Type, Water Coolers Design
- C. Outdoor, Free-Standing, Freeze-Resistant Drinking Fountains w/Bottle-Fill Station

1.02 REFERENCES

- A. ARI Standard 1010 – Self-Contained, Mechanically Refrigerated Drinking Water Coolers (capacity ratings)
- B. ASHRAE Standard 18 – Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration
- C. NSF/ANSI Standard 61 Annex G – Drinking Water System Components - Health Effects (lead-free components and materials in contact with drinking water)
- D. NSF/ANSI Standard 372 - Drinking Water System Components - Lead Content

1.03 SUBMITTALS

- A. Product Data: Manufacturer's specifications, catalog sheets and installation instructions for each type specified.
- B. Contract Closeout Submittals:
 - 1. Operation and Maintenance Data: Deliver 2 copies, covering the installed products to the Director's Representative.
 - 2. Warranty: Copy of specified warranty.

1.04 QUALITY ASSURANCE

- A. Regulatory Requirements:
 - 1. Comply with applicable requirements of NSF/ANSI 61 unless otherwise specified.
 - 2. Comply with the Federal Safe Water Drinking Act of 1986, and the Federal Lead Contamination and Control Act of 1988.
 - 3. Materials and installations designated as handicapped accessible shall conform with the following:
 - a. ANSI A117.1 - Buildings and Facilities - Providing Accessibility and Usability for Physically Handicapped People.
 - b. The Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG), (Appendix A to 28 CFR Part 36).
 - 4. Water cooler shall be U.L. listed and labeled.

1.05 WARRANTY

- A. Manufacturer's Warranty: Five year warranty for the hermetically sealed compressor, and evaporator assembly.

PART 2 PRODUCTS

2.01 PRESSURE-TYPE DOMESTIC WATER COOLERS

- A. Wall-mounted, self contained; air cooled water coolers connected directly to the cold water supply and sanitary waster system in the building. Unit shall be equipped with push button actuator. Water cooler shall supply nominal 50 degree F potable water, adjustable to plus or minus 5 degrees F, on demand with an inlet water temperature not to exceed 80 degrees F. Water cooler shall provide a drinkable stream of cold water from a vandal-resistant bubbler at the height indicated on the standard detail for installation. Bubbler shall maintain constant water stream height at pressures ranging from 20 psig to 105 psig. Unit shall be equipped with a long-lasting stainless steel evaporator/storage tank subject to the water line pressure only when the push button is pressed.
1. Receptor: Polished or satin finished stainless steel, 14 gauge, basin integral with cabinet that is sound deadened, with rounded corners, and with anti-splash back ridge and basin contour-formed for proper drainage and to eliminate splashing.
 2. Cabinet: Heavy duty, 14 gauge stainless steel, construction, with removable panels for servicing the chiller unit. Louvered openings shall be located in the sides of the cabinet to allow airflow across and through the chiller unit.
 3. Refrigeration System: Furnish with hermetically sealed compressor psig R134a refrigerant.
 4. Fixture Hanger: Steel, designed to mount fixture to fixture support, as furnished by water cooler manufacturer.
- B. Recessed water cooler, self-contained unit with surface-mounted bi-level receptors and fully recessed, self-contained chiller unit, connected directly to the cold water supply and sanitary waster system in the building. Each receptor shall be equipped with pushbar actuator that can be pushed anywhere on the 180 degree arc of the pushbar. Water cooler shall supply nominal 50 degree F potable water on demand with an inlet water temperature not to exceed 80 degrees F. Water cooler shall provide a drinkable stream of cold water from a vandal-resistant bubbler at the two heights indicated on the standard detail for installation. Both bubblers shall maintain constant water stream height at pressures ranging from 20 psig to 105 psig.
1. Receptor: Polished or satin finished stainless steel, 18 gauge or heavier, oval-shaped basin with rounded corners and edges that is contour-formed to eliminate splashing.

2. Grille and Frame: Same material, finish and styling as the receptor. Grille portion of the chiller unit shall be removable and louvered to provide ventilation for the fully recessed chiller.
 3. Refrigeration System: Furnish with hermetically sealed compressor psig R134a refrigerant.
 4. Mounting Frame: Steel wall box arranged with provisions for mounting the receptor and chilling unit, as furnished by water cooler manufacturer.
- C. Outdoor, free standing, freeze resistant drinking fountain with bi-level receptors compliant with American s with Disabilities Act Guidelines for wheelchair accessible drinking fountains. Drinking fountains shall be equipped with integral bottle-fill station at top center of unit. Each receptor shall be equipped with push button actuator. Both bubblers shall maintain constant water stream height at pressures ranging from 20 psig to 105 psig. The steel enclosure for this free-standing drinking fountain shall come with textured power coat paint finish applied on the inside and outside surfaces of the enclosure for maximum corrosion protection. Color of finish to be selected by owner's representative prior to placing order during construction. Color choices to be presented by installation contractor with product submittal. Drinking fountain shall come with ½ inch NPT water line connection.
1. Receptor: Polished stainless steel, 18 gauge or heavier, round basin with rounded corners and edges that is contour-formed to eliminate splashing and prevent standing wastewater.
 2. Freeze-resistant bury valve system shall be furnished and installed with drinking fountain and be installed with dimensions and materials as indicated on standard drawing detail. Water valve shall be underground below the frost line. Freeze-resistant valve shall allow drinking fountain to remain functional year-round.
- D. Trap: Copper p-trap concealed in wall with drain connection covered by water cooler unit for each type of water cooler specified herein..
- E. Shut-Off Valve: Wheel operated in wall.
- F. Electric Connection: Service cord with attached grounded plug.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install the work of this section in accordance with the manufacturer's printed installation instructions.
- B. Install at heights indicated on standard details and at locations indicated on plan drawings.
- C. Provide a union connection on the cooler side of the shut-off valve.
- D. Coordinate connection to power with electrical subcontractor.

3.02 CLEANING, FLUSHING AND ADJUSTMENT

- A. Clean and polish fixture and trim.
- B. Flush piping; clean strainers and trap.

C Adjust spout for proper water delivery as required.

END OF SECTION 22 4713

SECTION 23 3713 – DIFFUSERS, REGISTERS AND GRILLES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Air Outlets and Inlets: Diffusers, Registers, and Grilles.

1.2 SUBMITTALS

- A. Submit the following.
- B. Manufacturer's Literature and Data:
 - 1. Diffusers, registers, grilles and accessories.

1.3 APPLICABLE PUBLICATIONS

- A. Air Diffusion Council Test Code:
 - 1062 GRD-84..... Certification, Rating, and Test Manual 4th Edition
- B. American Society for Testing and Materials (ASTM):
 - A167-99 (2004)..... Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip
 - B209-07 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- C. National Fire Protection Association (NFPA):
 - 90A-09 Standard for the Installation of Air Conditioning and Ventilating Systems
- D. Underwriters Laboratories, Inc. (UL):
 - 181-08 UL Standard for Safety Factory-Made Air Ducts and Connectors

PART 2 - PRODUCTS

2.1 AIR OUTLETS AND INLETS

- A. Materials:
 - 1. Use steel air outlets and inlets. Provide manufacturer's standard gasket.

2. Contractor shall review all ceiling drawings and details and provide all ceiling mounted devices with appropriate dimensions and trim for the specific locations.
- B. Air Supply Outlets:
- C. Return and Exhaust Registers and Grilles: Provide with opposed blade damper option without removable key operator for registers.
1. Finish: Furnish with finish identified in Air Inlet and Outlet Schedule on drawings..
 1. Standard Type: Fixed horizontal face bars set at 30 to 45 degrees, approximately 1-1/4 inch margin.
 3. Perforated Face Type: To match supply units.
 4. Grid Core Type: 1/2 inch by 1/2 inch core with 1-1/4 inch margin.
 5. Egg Crate Grilles: Painted Steel 1/2 by 1/2 by 1/2 inch grid providing 90% free area.
 - a. Grille shall be suitable for duct or surface mounting as indicated on drawings. All necessary appurtenances shall be provided to allow for mounting.
- E. Acoustic Transfer Grille: Aluminum, suitable for partition or wall mounting.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Coordinate with other trades and work in the existing building.
- B. Protection and Cleaning: Protect equipment and materials against physical damage. Place equipment in first class operating condition, or return to source of supply for repair or replacement. Protect equipment during construction against entry of foreign matter to the inside and clean both inside and outside before operation and painting.

END OF SECTION 23 3713

SECTION 26 0500 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Electrical equipment coordination and installation
- B. Sleeves for raceways and cables.
- C. Sleeve seals.
- D. Common electrical installation requirements.

1.2 REFERENCES

- A. NFPA 70 - National Electrical Code; National Fire Protection Association.
- B. Documents referenced in the specifications are intended to refer the latest edition of the standard or document in force at the time of design completion.

1.3 SUBMITTALS

- A. Product data for each type of product indicated.

1.4 QUALITY ASSURANCE

- A. Test Equipment Suitability and Calibration: Comply with NETA ATS, "Suitability of Test Equipment" and "Test Instrument Calibration."

1.5 COORDINATION

- A. Coordinate arrangement mounting, and support of electrical equipment:
 - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
 - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
 - 3. To allow right of way for piping and conduit installed at required slope.
 - 4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.
- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- C. Coordinate location of access panels and doors for electrical items that are behind
- D. Coordinate electrical testing of electrical, mechanical, and architectural items so equipment systems

1.6 DEFINITIONS

- A. ATS: Acceptance Testing Specifications
- B. EPDM: Ethylene-propylene-diene terpolymer rubber.
- C. NBR: Acrylonitrile-butadiene rubber.

PART 2 - PRODUCTS

2.1 SLEEVES FOR RACEWAYS AND CABLES

- A. Steele Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40 Galvanized steel, plain ends.
- B. Sleeves for Rectangular Openings: Galvanized sheet steel with minimum 0.0785 (14-gauge) or 0.1382 (10-gauge) inch thickness as indicated and of length to suit application.
- C. Coordinate sleeve selection and application with selection and application of firestopping.

2.2 SLEEVE SEALS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
 - 1. Sealing Elements: EPDM or NBR interlocking links shaped to fit surface of cable or conduit. Include type required based on the fire rating of the wall or floor being penetrated.
 - 2. Pressure plates: Stainless steel, two for each sealing element.
 - 3. Connecting Bolts and Nuts: Stainless Steel of length required to provide pressure to sealing elements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Contractor is responsible to verify existing conditions prior to beginning work.

3.2 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION.

- A. Comply with NECA National Electrical Installation Standards (NEISs).
- B. Measure indicated mounting heights to bottom of unit for suspended items and to enter of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not Indicated,

arrange and install components and equipment to provide maximum possible headroom consistent with the requirements of the project.

- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to raceways and piping systems installed at a required slope.
- F. Seismic Reinforcement. Install electrical equipment with seismic reinforcement for seismic zone 2A.

3.3 EQUIPMENT HOUSEKEEPING PADS

- A. Install concrete equipment housekeeping pads flat and level in accordance with drawings, specifications, and electrical equipment manufacturer recommendations.
- B. Provide 4" high concrete housekeeping pads for all floor-mounted electrical equipment. Housekeeping pads shall extend 4" beyond the footprint of equipment unless equipment is mounted with one or more sides flush to a wall.
- C. Install conduits stubbed up in concrete prior to placing concrete. Stub up conduits a maximum of 1 inch above the level of the bottom floor of the equipment. Ensure that there is no mechanical interference with conduits and equipment floor steel.
- D. Scarify existing concrete slabs to receive new housekeeping pads. Provide dowels in existing concrete slabs and provide bonding agent for new concrete to adhere to existing concrete. Provide 45-degree chamfer edge for exposed edges of housekeeping pads.
- E. Where required, install base channels in the locations recommended by the manufacturer. Ensure that the channels lie in a flat, level plane in accordance with the manufacturer's instructions to ensure proper alignment and to prevent distortion of the switchgear cubicles and skeleton. Ensure that non-supporting areas of the foundation are lower than the tops of the steel channels.
- F. Sweep concrete housekeeping pads and remove debris before installing any equipment.
- G. Line up bolt holes in equipment bases with the bolt holes embedded in steel channels in the foundation. Loosely install anchor bolts but do not tighten. Verify that the back of the equipment is perpendicular to the concrete pad and has proper clearance. Draw a base line along the length of the intended location of the equipment in the front of the line-up to keep the shipping sections parallel when installing subsequent sections.
- H. Where base channels are not installed, provide concrete anchors and anchor electrical equipment to concrete housekeeping pads.
- I. Upon completion, completely seal between concrete pad and steel structure to prevent entry of rodents, water, etc.

3.4 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.

- B. Coordinate sleeve selection and application with election and application of firestopping.
- C. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used.
- D. Use pipe sleeves unless penetrations arrangement requires rectangular sleeved openings.
- E. Rectangular Sleeve Minimum Metal Thickness:
 - 1. For sleeve cross-section rectangle perimeter less than 50 inches and no side greater than 16 inches, thickness shall be 0.0785-inch(14-gauge).
 - 2. For sleeve cross section rectangle perimeter equal to or greater than 50 inches and 1 or more sides equal to or greater than 16 inches, thickness shall be 0.1382-inch(10-gauge).
- F. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of the floor or wall.
- G. Cut sleeves to length for mounting flush with both surfaces of walls.
- H. Extend sleeves installed in floors to a height 2 inches above the finished floor level.
- I. Size pipe sleeves to provide $\frac{1}{4}$ inch annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed.
- J. Seal space outside of sleeves with grout for penetrations of concrete and masonry, and with suitable joint compound for gypsum board assemblies.
- K. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable using joint sealant appropriate for size, depth and location of the joint.
- L. Fire-Rated Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetrations sleeves with firestop materials.
- M. Above ground exterior wall penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1 inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- N. Underground, exterior wall penetrations: Install cast iron wall pipes for sleeves. Size to allow for 1-inch annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

3.4 SLEEVE SEAL INSTALLATION

- A. Install waterproof seals where raceways are exposed to different temperatures in accordance with NEC article 300.7.
- B. Install to seal underground, exterior wall penetrations in accordance with NEC article 300.5(G).
- C. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in the center of the sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates to make watertight seal.

3.5 FIELD QUALITY CONTROL

- A. Inspect installed sleeve and sleeve-seal installations and associated firestopping for damage and faulty work.

3.6 TESTING AND COMMISSIONING

- A. Test and commission individual equipment and components as a system in accordance with manufacturer recommended start-up procedures and in indicated in individual specification sections for equipment.

END OF SECTION 26 0500

SECTION 26 0700 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Conduit and equipment supports.
- B. Anchors and fasteners.

1.2 REFERENCES

- A. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association; 2000.
- B. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

1.3 SUBMITTALS

- A. Product Data: Provide manufacturer's catalog data for fastening systems.

1.4 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Hangers, Supports, Anchors, and Fasteners - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.
- B. Supports: Fabricated of structural steel or formed steel members; galvanized.
- C. Anchors and Fasteners:
 - 1. Concrete Structural Elements: Use precast inserts, expansion anchors, powder-actuated anchors, or preset inserts.
 - 2. Steel Structural Elements: Use beam clamps, steel spring clips, steel ramset fasteners, or welded fasteners.
 - 3. Concrete Surfaces: Use self-drilling anchors or expansion anchors of stainless steel.

4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
5. Solid Masonry Walls: Use expansion anchors or preset inserts of stainless steel.
6. Sheet Metal: Use sheet metal screws.
7. Wood Elements: Use wood screws.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
 1. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
 2. Do not drill or cut structural members.
- B. Rigidly weld support members or use hexagon-head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- C. In wet and damp locations use stainless steel channel supports and fasteners.
- D. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

END OF SECTION 26 0700

SECTION 26 0750 – IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Identification for raceways.
 - 2. Identification of power and control cables.
 - 3. Identification for conductors.
 - 4. Underground-line warning tape.
 - 5. Warning labels and signs.
 - 6. Instruction signs.
 - 7. Equipment identification labels.
 - 8. Miscellaneous identification products.

1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.
- C. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.
- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.
- D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 POWER RACEWAY IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- B. Colors for Raceways Carrying Circuits at 600 V or Less:
 - 1. Black letters on an orange field.
 - 2. Legend: Indicate voltage and system or service type.
- C. Colors for Raceways Carrying Circuits at More Than 600 V:
 - 1. Black letters on an orange field.
 - 2. Legend: "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch- high letters on 20-inch centers.
- D. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

2.2 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

2.3 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

2.4 FLOOR MARKING TAPE

- A. 2-inch- wide, 5-mil pressure-sensitive vinyl tape, with black and white stripes and clear vinyl overlay.

2.5 UNDERGROUND-LINE WARNING TAPE

- A. Tape:
 - 1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical utility lines.
 - 2. Printing on tape shall be permanent and shall not be damaged by burial operations.
 - 3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- B. Color and Printing:
 - 1. Comply with ANSI Z535.1 through ANSI Z535.5.
 - 2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.

2.6 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.
- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
- C. Warning label and sign shall include, but are not limited to, the following legends:
 - 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
 - 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2.7 INSTRUCTION SIGNS

- A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.
 - 1. Engraved legend with black letters on white face.
 - 2. Punched or drilled for mechanical fasteners.
 - 3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.8 EQUIPMENT IDENTIFICATION LABELS

- A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

2.9 CABLE TIES

- A. General-Purpose Cable Ties: Fungus inert, self extinguishing, one piece, self locking, Type 6/6 nylon.
 - 1. Minimum Width: 3/16 inch.
 - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
 - 3. Temperature Range: Minus 40 to plus 185 deg F.
 - 4. Color: Black except where used for color-coding.
- B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self extinguishing, one piece, self locking, Type 6/6 nylon.
 - 1. Minimum Width: 3/16 inch.
 - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
 - 3. Temperature Range: Minus 40 to plus 185 deg F.
 - 4. Color: Black.
- C. Plenum-Rated Cable Ties: Self extinguishing, UV stabilized, one piece, self locking.
 - 1. Minimum Width: 3/16 inch.
 - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 7000 psi.
 - 3. UL 94 Flame Rating: 94V-0.
 - 4. Temperature Range: Minus 50 to plus 284 deg F.
 - 5. Color: Black.

2.10 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in Division 9 painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- F. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas. Comply with owner's established color coding for the facility.
- G. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
 - 1. Outdoors: UV-stabilized nylon.
 - 2. In Spaces Handling Environmental Air: Plenum rated.
- H. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.
- I. Painted Identification: Comply with requirements in Division 9 painting Sections for surface preparation and paint application.

3.2 IDENTIFICATION SCHEDULE

- A. Accessible Raceways, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30 A, and 120 V to ground: Identify with self-adhesive vinyl label self-adhesive vinyl tape applied in bands. Install labels at 10-foot maximum intervals.
- B. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
 - 1. Emergency Power.
 - 2. Power.
 - 3. UPS.

4. Batteries.
- C. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
 1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service feeder and branch-circuit conductors.
 - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
 - b. Colors for 208/120-V Circuits:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - c. Colors for 480/277-V Circuits:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
 - D. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
 - E. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
 1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
 2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
 3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
 - F. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable. Install underground-line warning tape for both direct-buried cables and cables in raceway.
 - G. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
 - H. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.

1. Comply with 29 CFR 1910.145.
 2. Identify system voltage with black letters on an orange background.
 3. Apply to exterior of door, cover, or other access.
 4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
 - a. Power transfer switches.
 - b. Controls with external control power connections.
- I. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
- J. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch- high letters for emergency instructions at equipment used for power transfer load shedding.
- K. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:
 - a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch- high label; where two lines of text are required, use labels 2 inches high.
 - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
 - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
 - d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
 2. Equipment to Be Labeled:
 - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be self-adhesive, engraved, laminated acrylic or melamine label.
 - b. Enclosures and electrical cabinets.
 - c. Access doors and panels for concealed electrical items.
 - d. Switchboards and switchboard controls.
 - e. Transformers: Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
 - f. Substations.
 - g. Enclosed switches.
 - h. Enclosed circuit breakers.
 - i. Enclosed controllers.

- j. Variable-speed controllers.
- k. Push-button stations.
- l. Power transfer equipment.
- m. Contactors.
- n. Remote-controlled switches, dimmer modules, and control devices.
- o. Battery systems.
- p. Battery racks.
- q. Battery monitoring equipment.
- r. Power-generating units.
- s. Monitoring and control equipment.
- t. UPS equipment.
- u. Conduits and ductbanks installed for future use.
- v. Power Distribution Units.
- w. Copper and fiber cables. (Coordinate with the owner for exact requirements)
- x. Air handling units and control equipment.
- y. Patch panels.
- z. Rack mounted switches.

END OF SECTION 26 0750

SECTION 26 1230 – ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Wire and cable for 600 volts and less for power and controls.
- B. Wiring connectors and connections.

1.2 REFERENCES

- A. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association.
- B. NETA STD ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems; International Electrical Testing Association.
- C. NFPA 70 - National Electrical Code; National Fire Protection Association.

1.3 SUBMITTALS

- A. Product Data: Provide for each cable assembly type.

1.4 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 WIRING REQUIREMENTS

- A. Concealed Dry Interior Locations: Use only building wire in raceway, building wire with Type THHN insulation in raceway, nonmetallic-sheathed cable, armored cable, or metal clad cable.
- B. Exposed Dry Interior Locations: Use only building wire in raceway, building wire with Type THWN or XHHW insulation in raceway, nonmetallic-sheathed cable, armored cable,, or metal clad cable.
- C. Above Accessible Ceilings: Use only building wire in raceway, building wire with Type

THHN/THWN or XHHW insulation in raceway, nonmetallic-sheathed cable, armored cable,, or metal clad cable.

- D. Wet or Damp Interior Locations: Use only building wire in raceway, building wire with Listed for wet or damp locations.

2.2 BUILDING WIRE

- A. Description: Single conductor insulated wire.
- B. Conductor: Copper.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation: NFPA 70, Type THHN/THWN or XHHW.

2.3 WIRING CONNECTORS

- A. Split Bolt Connectors:
- B. Solderless Pressure Connectors:

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that mechanical work likely to damage wire and cable has been completed.
- C. Verify that raceway installation is complete and supported.

3.2 INSTALLATION

- A. Install wire and cable securely, in a neat and workmanlike manner, as specified in NECA 1.
- B. Route wire and cable as required to meet project conditions.
 - 1. Wire and cable routing indicated is approximate unless dimensioned.
 - 2. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.
- C. Use wiring methods indicated.
- D. Pull all conductors into raceway at same time.

- E. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
- F. Neatly train and lace wiring inside boxes, equipment, panelboards and switchboards.
- G. Clean conductor surfaces before installing lugs and connectors.
- H. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.

END OF SECTION 26 1230

SECTION 26 1310 – CONDUIT AND CABLE TRAY

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Conduit, fittings and conduit bodies.
- B. Installation of cable tray systems for all work in Division 26 and 27 including required fittings and supports.

1.2 REFERENCES

- A. ANSI C80.1 - American National Standard Specification for Rigid Steel Conduit -- Zinc Coated.
- B. ANSI C80.3 - American National Standard Specification for Electrical Metallic Tubing -- Zinc Coated.
- C. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association.
- D. NECA 101 - Standard for Installing Steel Conduit (Rigid, IMC, EMT); National Electrical Contractors Association.
- E. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association.
- F. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Tubing and Conduit; National Electrical Manufacturers Association.
- G. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing; National Electrical Manufacturers Association.
- H. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

1.3 SUBMITTALS

- A. Product Data: Provide for metallic conduit, flexible metal conduit, liquidtight flexible metal conduit, metallic tubing, nonmetallic conduit, nonmetallic tubing, fittings, and conduit bodies, manufacturers product data.
- B. Provide complete shop drawings in accordance with Division 1 specifications for submittals.
- C. Provide complete cable tray layout with shop drawings showing all fittings, anchors, supports, expansion joints, fire stops, elevations, seismic supports, etc., along with a bill of materials.

1.4 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.
- C. Cable tray shall be UL approved as an equipment grounding conductor.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Accept conduit on site. Inspect for damage.
- B. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

PART 2 - PRODUCTS

2.1 CONDUIT REQUIREMENTS

- A. Conduit Size: Comply with NFPA 70.
 - 1. Minimum Size: 3/4 inch unless otherwise specified.
- B. Outdoor Locations Above Grade: Use rigid steel conduit, intermediate metal conduit, or electrical metallic tubing.
- D. Underground Locations: Use nonmetallic conduit with rigid steel conduit long sweep elbows.
- D. Wet and Damp Locations: Use rigid steel conduit, rigid aluminum conduit, electrical metallic tubing.
- E. Dry Locations:
 - 1. Concealed: Use rigid steel conduit, intermediate metal conduit, electrical metallic tubing.
 - 2. Exposed: Use rigid steel conduit or electrical metallic tubing.
- F. Below Accessible Floor: Use blue sealtite (liquid-tight flexible metallic conduit).

2.2 METAL CONDUIT

- A. Manufacturers: All materials submitted shall comply with the Buy-American Act as instituted by the Government and as prescribed either in the Government's General Conditions of the Contract or elsewhere in the Government's bidding and contracting requirements. Each and every submittal shall include a statement indicating that the product(s) being submitted complies with the Buy-American Act.
- B. Rigid Steel Conduit: ANSI C80.1.
- C. Rigid Aluminum Conduit: ANSI C80.5.

- D. Intermediate Metal Conduit (IMC): Rigid steel.
- E. Fittings and Conduit Bodies: NEMA FB 1; material to match conduit.
- F. Steel conduit shall be zinc coated, inside and outside.

2.3 FLEXIBLE METAL CONDUIT

- A. Description: Interlocked steel construction.
- B. Fittings: NEMA FB 1.

2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

- A. Description: Interlocked steel construction with PVC jacket.
- B. Fittings: NEMA FB 1.
- C. Color: Blue for below accessible floor applications.

2.5 ELECTRICAL METALLIC TUBING (EMT)

- A. Description: ANSI C80.3; galvanized steel tubing.
- B. Fittings and Conduit Bodies: NEMA FB 1; steel or malleable iron compression type only.

2.6 NONMETALLIC CONDUIT

- A. Description: Plastic conduit, PVC, polyvinyl chloride compound rated for direct burial, ultraviolet resistant, and conforming to UL Standard 651, Schedule 80.
- B. Type EB: Encased Burial Duct. PVC, polyvinyl chloride compound conforming to NEMA Standard TC-6, UL Standard 651A and designed for encased burial use. Use Schedule 80 long sweep elbows.
- C. Fittings: Same material as conduit and installed with watertight joint compound recommended by manufacturer.
- D. A FB 1; steel or malleable iron compression type only.

2.7 CABLE TRAY REQUIREMENTS

- A. Description: Aluminum ladder type cable tray having minimum 6" high solid sides, width as shown and specified herein. Construction materials shall be minimum 16 gage steel, galvanized after fabrication. Cable tray shall have 1-1/2" by 3/4" box channel rungs.
- B. Straight sections and fittings shall be designed to eliminate sharp edges or projections. Fitting

shall have the same load carrying capacity as straight sections. Provide necessary offsets, elbows, tees, etc., as required for complete systems as shown.

- C. Ground cable trays in accordance with NEC requirements and as shown. Each section of cable tray and fittings shall be bonded to the cable tray with suitable fittings to maintain electrical ground continuity throughout the system.
- D. Use bolted splice joints of design that eliminates any structural weakness at connections. Splice plates joined with eight (8) -3/8" bolts, lock washers and nuts. Tray bends and/or fittings with minimum radius of 12".
- E. Provide expansion joints for each 150 linear feet (or fraction thereof) of horizontal tray run, or where shown on drawings.
- F. Design load for Tray installation shall be: 200-lb./lin. ft. with 1.5 maximum deflection for the maximum tray widths with 8 foot span.
- G. Steel tray shall be Hot dipped galvanized after fabrication.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that field measurements are as shown on drawings.
- B. Verify routing and termination locations of conduit prior to rough-in.
- C. Route conduit as required to complete wiring system.

3.2 CONDUIT INSTALLATION

- A. Install conduit securely, in a neat and workmanlike manner, as specified in NECA 1.
- B. Install steel conduit as specified in NECA 101.
- C. Install nonmetallic conduit in accordance with manufacturer's instructions.
- D. Install concrete encased duct banks in accordance with NECA 605. Install manufactured spacers to maintain separation of conduits in concrete encased duct banks.
- E. Arrange supports to prevent misalignment during wiring installation.
- F. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
- G. Group related conduits; support using conduit rack. Construct rack using steel channel.
- H. Fasten conduit supports to building structure and surfaces under provisions of Section 261529.
- I. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary

supports.

- J. Do not attach conduit to ceiling support wires.
- K. Arrange conduit to maintain headroom and present neat appearance.
- L. Route exposed conduit parallel and perpendicular to walls.
- M. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
- N. Maintain adequate clearance between conduit and piping.
- O. Maintain 12-inch clearance between conduit and surfaces with temperatures exceeding 104 degrees F.
- P. Cut conduit square using saw or pipecutter; de-burr cut ends.
- Q. Bring conduit to shoulder of fittings and fasten securely.
- R. Use conduit hubs to fasten conduit to sheet metal boxes in damp and wet locations.
- S. Install no more than equivalent of three (3) 90 degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2-inch size.
- T. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic joints.
- U. Provide suitable pull wire in each empty conduit except sleeves and nipples.
- V. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
- W. Provide an equipment grounding conductor sized per NFPA 70 in all conduits with phase conductors.
- X. Provide a grounding bushing for all conduits entering a box, cabinet, equipment enclosure, etc., and bond to ground using a copper bonding jumper sized in accordance with the NEC.

3.3 CABLE TRAY INSTALLATION

- A. Suspend horizontal runs of cable tray utilizing ½" diameter steel hanger rods and Unistrut P-1000 channel or equal. Provide clips for attachment of side rail flange to each hanger. Provide hangers maximum 8'-0" on center. Each hanger designed for 500 pounds safe load. Use approved Beam clamps or bolted anchors. Reference Section 260700. Anchors in concrete rated 1000 pounds safe load. Use "No-OXID-A" compound where aluminum parts mate with steel parts.
- B. Cable tray installed so all parts of system are accessible for cable installation, inspection, and maintenance.

- C. Provide hangers each side of expansion joint fittings within 24". Provide ground strap #3/0 copper across both rails of tray for ground continuity.
- D. Install power cable in tray to maintain minimum one (1) cable diameter (of largest cable) space between cables to allow free air ampacity of cable per N.E.C. Tie cable to tray rungs with nylon ties, T&B "Tyrap" or equal. Use large ties. Tie cable at alternate rungs.
- E. Identify cable in cable tray 50' O.C. with tags to indicate feeder designation and destination. Reference Section 260750.
- F. The cable tray in this project is located in seismic zone 2A. Provide additional hangers and braces for the cable tray to comply with these seismic requirements as follows.
- G. Where cable trays penetrate fire rated walls, floors, etc, provide 16 gage steel sleeve through wall or floor sized to provide 2" clear space around tray. After cables are installed, firestop opening in accordance with fire stopping details provided by contractor/vendor installing firestop materials. Reference Section 260500.
- H. Provide 16 gage steel plates on both sides of opening to cover sleeve fastened to structure with minim of six (6) 1/2" bolts and inserts.
- I. Provide cable tray fittings to exit tray and drop cables into equipment or equipment racks. Use existing manufacturer recommended fittings at those locations.

END OF SECTION 26 1310

SECTION 26 1380 - BOXES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Wall and ceiling outlet and device boxes.
- B. Pull and junction boxes.

1.3 REFERENCES

- A. NECA 1 - Standard Practices for Good Workmanship in Electrical Contracting; National Electrical Contractors Association.
- B. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association.
- C. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; National Electrical Manufacturers Association.
- D. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers and Box Supports; National Electrical Manufacturers Association.
- E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); National Electrical Manufacturers Association.
- F. NFPA 70 - National Electrical Code; National Fire Protection Association.

1.4 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Provide products listed and classified by Underwriters Laboratories, Inc., as suitable for the purpose specified and indicated.

PART 2 – PRODUCTS

2.1 OUTLET AND DEVICE BOXES

- A. Sheet Metal Outlet and Device Boxes: NEMA OS 1, galvanized steel.
- B. Cast Boxes: NEMA FB 1, Type FD, aluminum. Provide gasketed cover by box manufacturer. Provide threaded hubs.

2.2 PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify locations of floor boxes and outlets in offices and work areas prior to rough-in.
- B. Size boxes in accordance with NFPA 70.

3.2 INSTALLATION

- A. Install boxes securely, in a neat and workmanlike manner, as specified in NECA 1. Support boxes from structure, independently of conduits, equipment, cabinets, etc.
- B. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and as required by NFPA 70.
- C. Coordinate installation of outlet boxes for equipment connected.
- D. Set wall mounted boxes at elevations to accommodate mounting heights as shown on drawings. Coordinate with architectural elevation drawings.
- E. Electrical boxes are shown on Drawings in approximate locations unless dimensioned.
 - 1. Adjust box locations up to 10 feet if required to accommodate intended purpose.
- F. Maintain headroom and present neat mechanical appearance.
- G. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only, unless otherwise noted.
- H. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.
- I. Install boxes to preserve fire resistance rating of partitions and other elements.
- J. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.
- K. Use flush mounting outlet boxes in finished areas.
- L. Do not fasten boxes to ceiling support wires.

- M. Support boxes independently of conduit.
- N. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.

3.3 ADJUSTING

- A. Adjust flush-mounting outlets to make front flush with finished wall material.
- B. Install knockout closures in unused box openings.

3.4 CLEANING

- A. Clean interior of boxes to remove dust, debris, and other material.
- B. Clean exposed surfaces and restore finish.

END OF SECTION 26 1380

SECTION 26 1550 - EQUIPMENT WIRING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Electrical connections to equipment.

1.2 REFERENCES

- A. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999.
- B. NEMA WD 6 - Wiring Devices - Dimensional Requirements; National Electrical Manufacturers Association; 2002.
- C. NFPA 70 - National Electrical Code; National Fire Protection Association; 2008.

1.3 SUBMITTALS

- A. Product Data: Provide wiring device manufacturer's catalog information showing dimensions, configurations, and construction.

1.4 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

1.5 COORDINATION

- A. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
- B. Determine connection locations and requirements.
- C. Sequence rough-in of electrical connections to coordinate with installation of equipment.
- D. Sequence electrical connections to coordinate with start-up of equipment.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
 - 1. Colors: Conform to NEMA WD 1.
 - 2. Cord Construction: NFPA 70, Type SO multi-conductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
 - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit over current protection

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.2 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions. Install manufacturer-recommended bus bars, lugs, terminations, etc., that are compatible with wire types, insulation, sizes, and wiring methods.
- B. Make conduit connections to equipment using flexible conduit. Use liquid tight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat-producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete

equipment wiring requirements.

- J. Provide liquid tight flexible metal conduit for all motor connections.

END OF SECTION 26 1550

SECTION 26 4500 - GROUNDING

PART 1. GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes solid grounding of electrical systems and equipment. It includes basic requirements for grounding for protection of life, equipment, circuits, and systems. Grounding requirements specified in this Section may be supplemented in other sections of these Specifications.
- B. Related Sections: Other Division 26 Sections may contain requirements that relate to this Section.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for ground connectors and connection materials, and grounding fittings.
- C. Field-testing organization certificate, signed by the Contractor, certifying that the organization performing field tests complies with the requirements specified in Quality Assurance below.

1.4 QUALITY ASSURANCE

- A. Listing and Labeling: Provide products specified in this Section that are listed and labeled. The terms "listed" and "labeled" shall be defined as they are in the National Electrical Code, Article 100.
 - 1) Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.
- B. Electrical Component Standard: Components and installation shall comply with NFPA 70, "National Electrical Code" (NEC).
- C. UL Standard 467 - Grounding and Bonding Equipment
- D. IEEE Standard 1100 - Powering and Grounding Sensitive Electronic Equipment
- E. NFPA 70, Article 250 - Grounding

PART 2. PRODUCTS

2.1 GROUNDING AND BONDING PRODUCTS

- A. Products: Of types indicated and of sizes and ratings to comply with NEC. Where types, sizes, ratings, and quantities indicated are in excess of NEC requirements, the more stringent requirements and the greater size, rating, and quantity indications govern.
- B. Conductor Materials: Copper

2.2 WIRE AND CABLE CONDUCTORS

- A. General: Comply with other Division 16 Sections for wires, cables and conductors. Conform to NEC Table 8, except as otherwise indicated, for conductor properties, including stranding.
- B. Equipment Grounding Conductor: Green insulated.
- C. Grounding grid conductors: Bare copper. #6 AWG and smaller, solid. Larger than #6 AWG, stranded.
- D. Bare Copper Conductors: Conform to the following:
 - 1) Solid Conductors: ASTM B 3.
 - 2) Assembly of Stranded Conductors: ASTM B 8.
 - 3) Tinned Conductors: ASTM B 33.

2.3 CONNECTOR PRODUCTS

- A. General: Listed and labeled as grounding connectors for the materials used.
- B. Pressure Connectors: High-conductivity-plated units.
- C. Bolted Clamps: Heavy-duty units listed for the application.

PART 3. EXECUTION

3.1 APPLICATION

- A. Equipment Grounding Conductor Application: Comply with NEC Article 250 for sizes and quantities of equipment grounding conductors, except where larger sizes or more conductors are indicated. Install a separate insulated equipment grounding conductors with circuit conductors for feeder and branch circuits.

3.2 INSTALLATION

- A. General: Ground electrical systems and equipment in accordance with NEC requirements except where the Drawings or Specifications exceed NEC requirements.
- B. Route grounding conductors along the shortest and straightest paths possible without obstructing access or placing conductors where they may be subjected to strain, impact, or damage, except as indicated.

3.3 CONNECTIONS

- A. General: Make connections in such a manner as to minimize possibility of galvanic action or electrolysis. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 - 1) Use electroplated or hot-tin-coated materials to assure high conductivity and make contact points closer in order of galvanic series.
 - 2) Make connections with clean bare metal at points of contact.
- B. Terminate insulated equipment grounding conductors for feeders and branch circuits with pressure-type grounding lugs. Where metallic raceways terminate at metallic housings without mechanical and electrical connection to the housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to the ground bus in the housing. Bond electrically noncontinuous conduits at both entrances and exits with grounding bushings and bare grounding conductors.
- C. Tighten grounding and bonding connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values for connectors and bolts. Where manufacturer's torquing requirements are not indicated, tighten connections to comply with torque tightening values specified in UL 486A.
- D. Compression-Type Connections: Use hydraulic compression tools to provide the correct circumferential pressure for compression connectors. Use tools and dies recommended by the manufacturer of the connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the ground conductor.
- E. Properly bond the new equipment racks and power distributions units as indicated on the drawings and as required by the NEC.

END OF SECTION 26 4500

SECTION 283100 – FIRE ALARM SYSTEM

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. This specification covers the modifications to existing fire alarm systems required under the City of Kansas City, Missouri ADA Compliance Project, Bid Package #6.
- B. The general provisions of Contract, including General and Supplementary Conditions and Division – 1 Specification Sections, apply to work specified in this section.

1.2 GENERAL DESCRIPTION OF WORK

- A. Following is the general scope of work description for each building location which requires modifications to the existing fire alarm system. The scope of work for each location shall include complete layout, installation, programming, and testing of all equipment, devices and components for the fire alarm system modifications specified at each location. Record Drawing documentation is required for all system modifications specified. Refer to PART 3 – EXECUTION for wiring requirements for new and relocated initiating devices and notification appliances.
- B. Bid Package #6, Location A. Hillcrest Community Center
 - 1. Install three (3) new strobe appliances at the following locations:
 - a. Install new strobe in Room 129 Kitchen
 - b. Install new strobe in Room 120 General
 - c. Install new strobe in Room 113 Computer
 - d. Install new fire alarm power supply
 - 2. The existing fire alarm system installed in the Community Center is a conventional Thorn Firequest 300 fire alarm panel. The existing system shall be expanded with a remote power supply to accommodate the new appliances if required.
- C. Bid Package #6, Location B. KC North Community Center
 - 1. Install three (3) new appliances at the following locations:
 - a. Install new strobe in Room 105 Kitchen
 - b. Install four new strobes in 127 Gymnasium
 - c. Install two new sounder/strobes in 127 Gymnasium
 - d. Install new fire alarm power supply
 - 2. The existing fire alarm system installed in the Community Center is a Firesense FDX5000 addressable fire alarm control panel. The existing system shall be expanded with a remote power supply to accommodate the new appliances if required.
- D. Bid Package #6, Location C. Tony Aguirre Community Center

1. Install nine (9) new notification appliances at the following locations:
 - a. Install new strobe in 109 Hall
 - b. Install new strobe in 111 Family Changing
 - c. Install new strobe in 212 Kitchen
 - d. Install two new sounder/strobes in 215 Meeting
 - e. Install four new strobes and one new sounder/strobe in 115 Pool
 - f. Install new fire alarm power supply
2. The existing fire alarm system installed in the Community Center is a Notifier SPF-1024 addressable fire alarm control panel. The existing system shall be expanded to accommodate the new appliances required. Provide and install a new distributed power supply panel to accommodate the new appliances if required.

E. Bid Package #6, Location D. Brush Creek Community Center

1. Install seven (7) new strobes, three (3) new speaker/strobes, replace seven existing speaker/strobes at the following locations:
 - a. Install new strobe in 111 Corridor
 - b. Install new strobe in 121 Play Room Restroom
 - c. Replace existing speaker/strobe in 132 Men's Pool Locker Room
 - d. Install new ceiling mounted strobe in the sink section of 134 Women's Pool Locker Room
 - e. Install new strobe in 136 Family Toilet
 - f. Install new ceiling mounted strobe in the shower area 131 Men's Gym Locker Room
 - g. Install new speaker/strobe in 113 West Lobby
 - h. Replace two existing speaker/strobes in 108 Gymnasium with 110 candela appliances
 - i. Install two new 110 candela speaker/strobes in 108 Gymnasium
 - j. Install new strobe in 108 Gymnasium
 - k. Replace two existing speaker/strobes in 102 Main Lobby with 110 candela appliances
 - l. Replace two existing speaker/strobes in 118 Meeting Room with 110 candela appliances
 - m. Install new strobe in 118 Meeting Room
 - n. Install new fire alarm power supply
2. The existing fire alarm system is a Siemens Cerberus addressable fire alarm control panel arranged with pre-recorded voice communication. Notification appliances are powered by a FCPS-24 6 amp remote power supply located at the fire alarm control panels. Provide and install a Snaw distributed power supply panel located adjacent to the existing fire alarm system panels as required for new notification appliances.

1.3 CONTRACT REFERENCES

- A. Piper-Wind Architects ADA Spreadsheets and referenced project sketches and photographs.

1.4 CODE REQUIREMENTS

- A. The requirements in this specification section are based on the requirements of the Kansas City, Missouri Building and Rehabilitation Code (2012). Any additional details of the building code relating to the installation of the design identified in these specifications shall become a part of this contract. If the Contractor discovers conflicts between these specifications and the building code, they shall be brought to the attention of the Engineer prior to any deviations from Contract requirements.

Fire alarm system layout, materials, manufacture, examination, testing, inspection, stamping, certifications, and documentation shall conform to applicable portions of the latest issue of the following adopted codes and standards, and all addenda thereto.

NATIONAL FIRE PROTECTION ASSOCIATION

- No. 70 – National Electrical Code (2011)
No. 72 – National Fire Alarm Code (2010)

AMERICANS WITH DISABILITIES ACT (ADA)

2010 ADA Standards for Accessible Design

- B. The requirements of these specifications and associated drawings take precedence over the minimum requirements of the Codes and Standards listed above.

1.5 LISTINGS AND APPROVALS

- A. All equipment, devices and appliances furnished under these specifications shall be Factory Mutual (FM) approved or Underwriters Laboratories (UL) listed unless specifically noted otherwise. Approved or Listed equipment shall be so noted in the latest edition of the FM Approval Guide (P7825a) or the UL Fire Protection Equipment Directory.

1.6 CONTRACTOR'S QUALIFICATIONS

- A. This section covers the technical qualifications required for the Contractor's Technical and Installation personnel.

1. Contractor

Installation shall be performed by a Fire Alarm Contractor who is experienced in the layout and installation of fire alarm systems (minimum 5 years). Additionally, the Contractor shall have successfully installed fire alarm systems of the same type and layout as specified herein. The Contractor shall submit the names and locations of at least two installations where the Contractor installed such systems. The Contractor shall certify that each system has performed satisfactorily for a period of not less than two years.

B. Technician

Detailed layout shall be by a NICET Level III or IV Technician (Fire Alarm Systems Subfield of

Fire Protection Engineering Technology), Registered Fire Protection Engineer, or a Registered Professional Engineer with at least 2 years experience in fire protection layout.

C. Installation Supervisor

Contractor's installation supervisor(s) shall have at least five years of experience in fire alarm installation, be technically competent, trained, and experienced in the installation and operation of the equipment under their jurisdiction, and authorized by the equipment manufacturer to perform the work stipulated. The supervisor shall be on the job site during the entire installation.

1.7 DOCUMENT SUBMITTALS

- A. The Contractor shall submit the documents electronically, for review, to the Architect prior to the start of fabrication or installation. The submittal shall include required information for all work associated with the building fire alarm system modifications specified. Documents shall be fully completed and certified by the Contractor as to the compliance of the information contained thereon with the requirements of the contract documents. Incomplete submittals will not be reviewed. Complete submittals will be reviewed by the Engineer and processed as specified in Division 1. The Engineer's review will be for general conformity to the specified requirements and is not intended to constitute detailed review or approval of content. Documents stamped ACCEPTED do not relieve the Contractor from any contract requirements.
- B. All drawings shall be prepared on AutoCAD (Version 2010 or later). Drawings and data shall be in sufficient detail to indicate the kind, size, arrangement, and operation of component devices; the external connections, anchorages, and supports required; and dimensions needed for installation and correlation with other equipment. All drawings shall be to a standard architectural scale which shall be noted on the drawings (Graphic Representation). Drawing size shall not be less than 30 inches by 42 inches (B1) or greater than 34 inches by 44 inches (A0).
- C. All Equipment and Material Data Sheets and Calculations shall be submitted as a single PDF document. The document shall include bookmarks for each product submittal. Drawings shall be submitted as individual full size PDF files. A separate transmittal PDF file shall be included. The drawings and calculations shall have a certifications sheet bearing the the NICET Designer Certification. The transmittal shall also include the specification title, the specification number, and the Contractor's name.
- D. Documents Required

The following documents shall be submitted for this project.

1. Equipment and Material Data Sheets

Equipment and material data sheets shall be submitted for all new equipment and devices used in the systems. If options are listed on the data sheets, the specific option for the project shall be clearly marked. The data sheet submittal shall include but not be limited to the following items where applicable to the building scope of work:

- a. Distributed Power Supply Panel(s) and Components – Documents shall include product data sheets, installation instructions, and programming manuals.

- b. Remote Amplifier Panel(s) and Components – Documents shall include product data sheets, installation instructions, and programming manuals.
- c. Batteries and Enclosures
- d. Notification Appliances (Data sheets and installation instructions)
- e. Initiating Devices (Data sheets and installation instructions)
- f. Wire (including color code schedule)
- g. Conduit and Supports
- h. Conduit fill schedule. The schedule shall identify the diameters of all wire chosen, and the number of conductors allowed in each conduit size.
- i. Junction Box Labels
- j. Firestopping Materials and Systems
- k. Terminal Strips and Connectors (Where Specifically Approved)

2. Arrangement Drawings

Arrangement drawings shall be submitted showing the exact location of all equipment including, but not limited to, the following:

- a. Distributed Power Supplies
- b. Remote Amplifiers
- c. Notification Appliances
- d. Manual Pull Stations
- e. New and Existing (to be re-used) Raceway

Raceway layout shall be shown on the drawings for all new and existing (to be re-used) circuitry associated with the fire alarm system. This includes the 120 volt ac circuitry to each new distributed power supply or remote amplifier installed. Identification of all circuits within conduit shall be provided.

Interconnection diagrams shall be submitted, showing the details of field wiring terminations on all devices, appliances and other field components. Refer to PART 3 – EXECUTION for wiring requirements.

3. Schematic Drawings

Schematic type drawings shall be submitted that show all external circuits associated with the fire alarm system. Drawings shall show the arrangement of all devices on each circuit. Circuit and device numbers shall be chosen to correlate with the specific panel layout and programming including general contract requirements.

4. Fire Alarm System Panel Documents

These requirements apply to modification to existing Fire Alarm Control Panels and Distributed Power Supply Panels and their associated circuitry. The following documents shall be submitted for new or modified panel. Separate drawings are not required for each item listed below; however, the documents shall include all required information.

- a. Outline Drawings. Drawings shall be submitted of panel showing dimensions and arrangement of all lights, switches, and labels and show the arrangement of all circuit

boards and modules in the panel (new and existing).

- b. Logic Diagrams. Logic diagrams shall be submitted that show complete operation of all alarm and control functions of the panels. A well written sequence of operations document or matrix may be substituted for these drawings.
- c. Interconnection Diagrams. Interconnection diagrams shall be submitted which show all external connections (new and modified) required for complete operation of the system as specified. Circuit numbers shall be shown on all connections to the terminal blocks and shall correlate with other drawings.
- d. Calculations. The following calculations shall be submitted for each new or modified panel.
 - 1) Battery Calculations. Battery calculations shall be submitted for each modified Fire Alarm Control Panel. If standard manufacturer forms are used, the manufacturer's instructions shall also be included.
 - 2) Power Supply Calculations. Calculations shall be provided for each power supply to confirm the spare loading capacity requirements of these specifications are met. Calculations shall include the manufacturer's listed rating for each piece of equipment.
 - 3) Power Supply Output Circuit Capacity Calculations. Calculations shall be provided for each notification appliance circuit, , to confirm the circuit spare capacity requirements of these specifications are met. Calculations shall include the manufacturer's individual output circuit rating for each power supply.
 - 4) Circuit Sizing Calculations. Calculations shall be provided for each external notification to prove that wire sizes chosen have voltage losses and current draws within the acceptable limits as stated by the manufacturer. Manufacturer data indicating maximum acceptable current draw and voltage loss shall be included with calculations.

7. Certifications

- a. The certification from the major equipment (control panel) manufacturer indicating that the Contractor is an authorized representative of the major equipment manufacturer. Include name and address in the certification. The Contractor shall also provide certification from the manufacturer for the proposed supervisor of installation.
- b. The revised record of completion as required by NFPA 72. The form shall be filled in as described in the standard. All information shall be typewritten. Provide the preliminary copy after completion of all pre-tests but before the final test. Provide the final copy after the completion of the final acceptance tests.

E. Document Disposition

1. The reviewed documents will be returned, in one of the following ways:
 - a. ACCEPTED
 - b. ACCEPTED WITH COMMENTS NOTED
 - c. ACCEPTED WITH COMMENTS NOTED – RESUBMITTAL REQUIRED
 - d. REJECTED
2. When the documents are returned marked ACCEPTED, the Contractor is released to begin fabrication and installation.
3. When the documents are returned marked ACCEPTED WITH COMMENTS NOTED, the Contractor shall make the noted changes and is released to begin fabrication and installation. The changes do not need to be resubmitted until the Record markups (red-lines) are submitted unless noted otherwise.
4. When the documents are returned ACCEPTED WITH COMMENTS NOTED – RESUBMITTAL REQUIRED, the basic layout is approved, however, the Contractor is not released to fabricate or begin installation. A complete resubmittal is required (all documents) unless specifically noted otherwise. All revisions shall be backcircled. The Contractor NICET Certification is required on the resubmittal unless specifically noted otherwise.
5. When the documents are returned REJECTED, the Contractor shall revise the layout and calculations based on the review comments and resubmit. All revisions shall be backcircled. The NICET Certification
6. Resubmittals will not be reviewed without a correction or response for each review comment.

1.8 FINAL DOCUMENTATION

- A. Marked up shop drawings (red-lines) and Record Drawings shall be submitted. Red-lines shall be submitted prior to the acceptance test. Record Drawings are required to be submitted to the Engineer within two weeks after the final acceptance test.
- B. All submittals shall be electronic, in the form and arrangement of the original document submittals. After acceptance of all documents, one hard copy shall be distributed to the Owner (drawings shall be rolled). A CD or DVD shall accompany the hard copy. The electronic copy shall include a single PDF file of the Installation, Operation and Maintenance Manual (except the NFPA Document). The file shall be bookmarked for each item. Drawings shall be included as individual full size PDF files and individual bound AutoCAD files. A copy of the CD or DVD shall be forwarded to the Engineer.
- C. The following documents shall be included in the final documentation:
 1. Equipment Data Sheets and Calculations

Equipment data sheets and calculations, as outlined in the submittal section, shall be provided to the building Owner for incorporation into an existing Operation and Maintenance Manual.

Datasheets and calculations shall be updated, if necessary, due to any approved equipment substitutions, modified conditions, or review comments. Where distributed power supplies and remote amplifiers are provided, installation, operation, and maintenance manuals shall be furnished in addition to equipment datasheets.

2. Record Drawings

The record drawings shall include all required shop drawings noted in Paragraph 1.07. The information on the shop drawings shall be modified to show the final condition of the fire alarm system. Modifications shall include, but not be limited to, the following items:

- a. All devices and appliances and other components shall be shown in their actual locations. Device numbers shall be updated where necessary to show final conditions. Notations regarding re-use or relocation of devices or appliances shall be removed.
- b. Conduit routing and circuit identification shall be updated to reflect actual routing.
- c. Devices, appliances and components removed during construction shall be removed from drawings.
- d. General notes, keyed notes and other notations on drawings explaining work to be performed during construction shall be removed.
- e. Detail drawings shall be modified to reflect final conditions.
- f. The revision block shall show a revised date and indicate that the revision is the "Record Drawings".

Additional drawings shall be developed where needed to accurately document final conditions.

3. Certifications

- a. The certification from the major equipment (control panel) manufacturer indicating that the supervisor of installation is an authorized representative of the major equipment manufacturer. Include name and address in the certification.
- b. The revised record of completion as required by NFPA 72.

1.9 SYSTEM ARRANGEMENT

A. Pathway Designations

New circuitry shall be of the same Class and Style as existing circuitry of the same type.

B. Raceway

Raceway for all new circuitry shall be metallic conduit. Existing dedicated fire alarm system conduit may be re-used if in good condition and meeting all size and routing requirements of this contract. Use of specific existing conduit shall be subject to the approval of the Engineer. Materials and routing requirements are noted in Parts 2 and 3.

C. Wiring and Cable

All fire alarm circuitry installed by the Contractor will be routed in dedicated fire alarm conduits. All new wiring shall match existing for the same circuit type and shall be compatible with existing devices or appliances and control equipment.

All wiring, including wiring to new devices, appliances, field components and interfaced building equipment shall be new.

1.10 WARRANTY

- A. Complete warranty services for the new fire alarm system new components and installation shall be provided, by a factory trained authorized representative of the manufacturer of the major equipment for a period of two years beginning at the conclusion of the final acceptance test.
- B. All equipment and materials shall be warranted to be free of mechanical and electrical defects by the Contractor/Manufacturer. Labor for replacement of failed equipment and materials shall be included. All software and programming shall be warranted to operate without disruption. All details of the installation shall be included in the warranty.
- C. Service calls (normal) shall require response within six (6) hours of notification of system trouble. Emergency service call response time shall be two (2) hours and shall be limited to panels or other major components that affect the integrity of the system. Repairs shall be completed within 48 hours of notification. The Contractor shall show how they will provide this capability and furnish the Owner with a 24 hour service call number.

PART 2 – PRODUCTS

2.1 GENERAL

A. Materials

- 1. Equipment shall be furnished as outlined in the following subsections. Unless specifically provided otherwise, all materials and equipment furnished for permanent installation in the work shall conform to applicable standard specifications and shall be new, unused, and undamaged.
- 2. Individual parts shall be manufactured to standard sizes and gauges so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be of the same manufacturer and interchangeable.

3. All electronics shall be rated to withstand the temperature and humidity expected in the different areas of the building.

B. Listing and Approvals

1. All equipment and devices furnished under these specifications shall be Factory Mutual (FM) approved or Underwriters Laboratories (UL) listed unless specifically noted otherwise.

2.2 RACEWAY AND WIRING

A. Raceway

1. Unless specified otherwise, all raceway, interconnections between devices, panels, boxes, and fittings shall conform to ANSI C80.1 and UL 6. (Rigid Conduit). Flexible conduit (not pre-wired) may be used as specifically allowed in Part 3 of these specifications. Existing dedicated fire alarm raceway may be used if meeting all requirements listed below.
2. The electrical conduit system shall be furnished and installed by the Contractor. Conduit shall include all fittings and supports and all flexible conduit and fittings. Electrical conduit and associated materials shall be metallic and conform with the requirements of the codes and standards listed in this section.
3. New and reused Raceways and conduits shall be provided with permanent labels at every junction box cover indicating that fire alarm wiring is within. Labels shall be subject to acceptance by the Engineer. The raceway system provided for all interconnecting wiring shall be acceptable to the Owner.

a) Minimum Conduit Size

The minimum allowable conduit size shall be ¾ inch.

b) Conduit Supports

Conduit supports shall be furnished in accordance with these specifications. Support material shall comply with the requirements which follow.

c) Hanger Rods: Hanger rods shall be electro-galvanized all-thread steel rods.

d) Conduit Clamps: Supports for conduits in single runs or groups of two shall be one-hole cast metal clamps and clamp-backs. They shall be galvanized malleable iron or acceptable equal cast ferrous metal for steel conduit.

Supports for banks of three or more conduits shall be constructed of support channels (Unistrut, Kindorf, or acceptable equal) with associated conduits clips. Support channels shall be steel, hot-dip galvanized after fabrication with galvanized steel

conduit clips for steel conduit.

e) Conduit Bodies, Boxes, and Enclosures

Conduit bodies, boxes, and enclosures installed outdoors shall be raintight.

f) Fittings

Raintight fittings shall be used throughout the raceway system.

B. Cable and Wire

1. The type of cable or wire chosen should be based on fire alarm system requirements, specification requirements and applicable code requirements. Consideration should also be given to the length of cable runs and potential interference.
2. All wiring provided on this project shall be in accordance with NFPA 70, Article 760, for the intended wire use. All wiring, including wiring to existing devices and appliances, shall be new.

c) Metallic Cable/Wire

All electrical wires shall be selected for the electrical and environmental conditions of the installations and shall be of the best construction for the service where unusual service conditions are encountered. Proper temperature application wire shall be used throughout. Except where required to be otherwise to perform satisfactorily in the service, all electrical conductors shall be solid copper, minimum 16 AWG for initiating device, signaling line, and control circuits and minimum 14 AWG for notification appliance circuits. Wire type for the voice circuitry shall be as recommended by the Manufacturer and shall be a minimum of 18 AWG. Wire and cable shall be twisted and shielded if recommended by the system manufacturer. New initiating signaling line and control circuits shall be sized (above minimums noted above) based on 20% additional power consuming devices on a 30% longer circuit. New notification appliance circuits shall be sized (above minimums noted based on 50% additional appliances on a 30% longer circuit.

General service power cables, for the equipment furnished but not internal wiring of control cabinets or panels, shall be rated for the maximum service voltage but not less than 600 volts.

2.3 INITIATING DEVICES

A. Manual Pull Stations

1. Manual pull stations shall be of the same type and manufacturer as the existing pull stations and shall be compatible with the existing building fire alarm control panel. Factory mounted terminals shall be provided for external wiring terminations.

2.4 NOTIFICATION APPLIANCES

A. Occupant Notification Appliances

1. New fire alarm notification appliances shall be of the same type and manufacturer as the existing appliances within the building. Types of appliances to be provided are strobes, sounder/strobes, and speaker/strobes. Refer to Paragraph 1.2 GENERAL DESCRIPTION OF WORK for the types of appliances to be provided in each building.
2. Fire alarm appliances shall operate on 24 volts dc. The audible component shall create the 3-pulse temporal pattern signal. The minimum sound output shall exceed 80 dBA at 10 feet and not exceed 120 dBA at the minimum hearing distance from the appliance.
3. Strobes shall operate on 24 volts dc. The strobes shall have a clear lens with the word "Fire" in one inch minimum height letters. The strobe intensity and design shall meet or exceed ADA requirements and UL 1971 requirements. Strobes with minimum Candela rating of 75 shall be provided in all common use areas except as follows. Small common use rooms with a viewing distance not exceeding 25 feet may use 30 Candela strobes. Common use rooms not exceeding 12 feet by 12 feet may use 15 Candela strobes. Strobes in all other areas of the building shall have a minimum rating of 75 Candela.
4. Speakers shall operate on the same voltage as existing speakers. Speakers shall have multiple output wattage taps with a minimum range of ¼ to 2 watts. The output shall meet or exceed the sound level required for the room or area in accordance with NFPA 72 requirements. The speakers shall not utilize the highest wattage tap to obtain the required sound level. The speakers chosen shall be suitable for the acoustics of the building.
5. Wall mounted appliance housings shall be OSHA red. Ceiling mounted appliances shall be white. These appliances shall be factory polarized if polarization is required to operate with the fire alarm system. Factory mounted terminals shall be provided for external wiring connections.

2.5 Distributed Power Supplies

1. Each distributed power supply shall be UL Listed and designed in accordance with NFPA 72. Each panel shall be of the same manufacturer as the fire alarm panels where possible. Each panel shall be designed for surface mounting and shall have the following features:
 - a) The panel shall be UL Listed for operation with the proposed notification appliances.
 - b) Primary power for the panel shall be from the building's 120 volt ac power and be provided with a battery backup. The panel shall be provided with surge protection on the 120 volt ac incoming power. Upon failure of the

normal power, the system shall automatically revert to the battery power without any interruption or loss of alarm, control, status or supervisory function. Operation of the system on the secondary power shall be annunciated on the associated Fire Alarm Control Panel.

- c) The battery system shall include a charger in compliance with NFPA 72. The batteries shall be sized to operate the system under the maximum normal load for 24 hours and then be capable of operating the system for five minutes in the alarm condition. The system loads used to size the batteries (alarm and normal conditions) shall be a minimum of 10% above actual calculated loads. Batteries shall be sealed Lead-Acid.
- d) The load connected to any new power supply shall not exceed 80% of its rated capacity (amperes).
- e) New Notification Appliance Zones shall not be loaded beyond 50% of their rated capacity (amperage). Existing Notification Appliance Zones being provided with new appliances shall not exceed manufacturer's maximum load requirements.
- f) Dry contacts shall be provided for annunciation of loss of AC power and battery trouble, and notification appliance circuit trouble.
- g) The panel locks shall be keyed to match the Fire Alarm Control Panel.
- h) Panel door shall be provided with a permanent nameplate identifying it as noted on the Riser Diagram.

PART 3 – EXECUTION

This section covers the installation and installation material requirements for the fire alarm system.

3.1 GENERAL

A. Personnel

The supervisor shall have all contract documents on site at all times. The supervisor shall also have a copy of all submittals (shop drawings and all other documentation). The supervisor shall be responsible for daily updating of the shop drawings and other data to reflect the actual installation (red-lines). These drawings shall be made available to the Owner for review at any time.

This facility will continue in operation during the construction period. Construction shall be coordinated with the Owner to minimize disruption to the facilities general operation. The Contractor's personnel shall abide by all security and safety requirements of the Owner.

B. Working Hours

Working hours shall be coordinated with the Owner and the General Contractor.

C. Impairment of Existing Alarm System

All modifications of the existing fire alarm system shall be staged to limit the frequency and duration of alarm system impairments. The Contractor shall notify the Owner in writing at least 24 hours in advance of any impairments. The system shall not be left unattended in an impaired state.

3.2 RACEWAY AND WIRING INSTALLATION SCOPE

A. The Contractor shall furnish and install all required conduit and all associated hardware, and shall install (pull), connect, and test all cable for a complete fire alarm system. All wiring shall be installed in accordance with the guidelines of these specifications and documents as well as the NFPA codes and standards listed in these specifications.

1. Wiring and terminations specifically included under this section includes, but is not limited to the following:

- a) 120 volt ac power (dedicated branch circuit) to the Distributed Power Supply Panel(s) and remote amplifier(s), where provided.
- b) Installation of the surge suppressor, associated ground circuitry and termination of the 120 volt ac circuitry at each now distributed power supply or remote amplifier.
- c) Between new components of the voice system.
- d) Between new panels and their associated batteries.
- e) Between new initiating devices, notification appliances, and components supplied or noted to be reused under this section and the Fire Alarm Control Panels.
- f) Between the existing FACP and new Distributed Power Supplies or remote amplifiers.
- g) All additional wiring required, not specifically excluded above, for a complete operational system.

The Contractor shall furnish and install an electrical wiring, cable and conduit system as outlined in these specifications for a complete operating system.

3.3 RACEWAY INSTALLATION

A. General

All new wire and cable shall be installed in conduit. Conduit installation shall be as required by the Contractor's layout and as described in these specifications. All conduit field routing is subject to acceptance of the Owner and the Engineer. Routing not acceptable shall be rerouted and replaced without expense to the Owner.

B. Concealing

All wire, cable, conduit and raceways shall be concealed in walls, ceiling spaces, electrical shafts or closets in finished areas. Conduit and raceways may be exposed in unfinished areas or where specifically approved by the Owner.

C. Sizing

Minimum allowable conduit size shall be ¾ inch. The conduit shall be sized so that conduit fill does not exceed 75% of NFPA 70 maximum fill requirements.

D. Routing

Except as otherwise specified or indicated on the drawings, all conduit shall be installed parallel or perpendicular to dominant surfaces with right angle turns made of symmetrical bends or fittings. Raceway shall be routed as close to the structure as possible. Raceway shall not be less than 18 inches above ceiling tiles in finished areas. Except where prevented by the location of other work, a single conduit or a conduit group shall be centered on structural members.

Conduit shall be located at least six inches from hot water or steam pipes, and from other hot surfaces. Conduit shall not block access to any existing equipment or fixtures.

Buried conduit shall be buried at least 2 feet below grade and provided with a copper tracer wire.

Exterior wall penetrations shall be sealed to prevent moisture from entering the building.

E. Moisture Pockets

Moisture pockets shall be eliminated from conduits. If water cannot drain to a natural opening in the conduit system, a breather fitting shall be installed in the bottom of a pull box or a "C-type" conduit fitting provided in the low point of the conduit run.

F. Bends and Offsets

A run of conduit shall not contain more than the equivalent of four quarter bends, including those immediately at outlets or fittings. Bends in conduit shall be made without reducing the internal diameter of the conduit. The use of a pipe tee or vise for bending conduit is prohibited. The inside radius of conduit bends shall be not less than six times the inside diameter of the conduit. Conduits deformed or crushed in any way shall be removed from the job site.

G. Connections to Boxes and Cabinets

Conduit shall be securely fastened to all boxes and cabinets. Threads on metallic conduit shall project through the wall of the box to allow the bushing to butt against the end of the conduit. The locknuts both inside and outside shall then be tightened sufficiently to bond the conduit securely to the box. Conduit shall enter cabinets or boxes with terminations or electronic equipment from the bottom and sides only.

H. Cleaning

Precautions shall be taken to prevent the accumulation of water, dirt, or concrete in the conduit. Conduit in which water or other foreign materials have been permitted to accumulate shall be thoroughly cleaned or, where such accumulation cannot be removed by methods acceptable to the Owner, the conduit shall be replaced.

I. Spacing and Attachment of Supports

All conduit runs shall be rigidly supported. Each conduit shall be supported within one foot of junction boxes and fittings. Support spacing along conduit runs shall be as outlined in NFPA 70.

3.04 CABLE AND WIRE INSTALLATION

A. General

Where new circuits are provided, wiring shall extend from the panel, landing and passing through devices or appliances. Tee taps and field splicing are prohibited.

Where existing devices or appliances are relocated within close proximity of their original location, existing circuitry may be extended by field splicing of existing wiring. Field splices using wire nuts are prohibited. For field splicing, new and existing wiring shall land on terminal blocks. The terminal block shall be located within a junction box. New wiring shall extend from the terminal block to the relocated device or appliance.

Where existing devices or appliances are relocated to another area of the building, field splicing of existing wiring is prohibited. New wiring shall be provided from the nearest existing appliance or device on the same circuit to the relocated device or appliance.

B. Terminations

All field wiring shall terminate on terminal blocks in fire alarm panels and at field devices and appliances.

Connections using wire nuts are prohibited.

C. Identification

The Contractor shall identify the ends of all circuits. The Contractor shall also identify all circuits in new pull and junction boxes. A conductor identification sleeve shall be provided on each end of each internal conductor. Conductor identification shall be permanent, unaffected by heat, solvents, or steam, and not easily dislodged. Each marker shall bear the number of the circuit according to the drawings. One end of each marker shall remain free of the fastening tail, and the entire marker shall be so attached that it is readily visible for circuit identification. Sample conductor markers shall be submitted for review and acceptance.

3.5 EQUIPMENT LOCATIONS AND INSTALLATION

A. General

All equipment shall be installed in accordance with these specifications, the codes and standards listed as well as the manufacturers guidelines. All initiating devices notification appliances and other equipment or devices located external to the fire alarm panel that are included in the scope of work, shall be provided with typed, self adhesive labels (permanent) indicating device and/or circuit numbers. All field equipment, including interface devices, initiating devices and notification appliances shall be located in compartments, enclosures or junction boxes, in such arrangement that a serviceman will have direct access to the equipment without disturbing other building equipment or utilities.

B. Notification Appliances

The locations of notification appliances are shown on the contract sketches. The appliances' exact location shall be proposed by the Contractor and are subject to the acceptance of the Engineer. In general, the appliances shall be located so that the bottom of the strobe is 80 inches above the highest floor level within the space or six inches below the ceiling, whichever is lower. The placement along the wall shall be chosen to provide the best field of viewing from any place within the room or area. The appliances shall be flush mounted in all finished spaces and in other spaces where possible. Sound levels of individual units shall be chosen to meet or exceed NFPA 72 required sound levels throughout the room or area.

3.6 FIRESTOPPING

- A. Firestopping shall be provided where conduit penetrates fire rated walls and all floors.
- B. Firestopping shall have a rating equivalent to the rating of the wall or floor being penetrated (2 hours unless noted otherwise). Firestopping materials and methods shall be in accordance with a specific Underwriters Laboratories Listed System for the materials being penetrated.

3.7 SYSTEM TESTS

A. General

This sub-section covers testing of the fire alarm devices and appliances furnished or installed under these specifications.

All labor and equipment for testing shall be the responsibility of the Contractor. A sufficient number of Contractor personnel shall be available to monitor all panels and annunciators as well as test the field devices. All personnel shall have radios or telephones that operate within the building for communication.

B. Pre-Tests

The Contractor shall completely pre-test each new or modified component of the system after installation is complete and prior to the final acceptance test. The Contractor shall notify the Engineer in writing of the proposed test date at least two weeks in advance. All defects discovered by pre-testing shall be corrected and the systems retested. The Contractor shall provide written confirmation of the results of the pre-test, to the Engineer at least 48 hours before the final acceptance test. The test date and time is subject to the approval of the Engineer. Pre-

testing involving notification appliances shall be coordinated with the Engineer.

The pre-test shall include but not be limited to the following tests:

1. Field Wire and Cable Tests:

Each new or modified circuit shall be tested as follows:

- a. Stray Voltages. Verify that stray (unwanted) voltages that could constitute a hazard or prevent proper system operation do not exist between the installation conductors and ground or between installation conductors.
- b. Ground Faults. All installation conductors other than those intentionally and permanently grounded should be tested for isolation from ground using an insulation testing device that will not damage connected equipment.
- c. Short Circuit Faults. All installation conductors other than those intentionally connected together should be tested for conductor-to-conductor isolation using an insulation testing device. These same circuits should be tested conductor-to-ground, also.
- d. Loop Resistance. With each signaling line circuit initiating notification appliance, and control circuit conductor pair short-circuited at the far end, measure and record the resistance of each circuit. Verify that the loop resistance, voltage drop and current do not exceed the manufacturer's specified limits. Records of reading from these tests shall be submitted to the Engineer with a copy of the manufacturer's requirements on all external circuitry.
- f. Normal and Alarm Mode Current Draw. The system current shall be measured in the normal mode and alarm mode, with 100% of the devices in alarm, to confirm numbers used in battery and power supply calculations. Actual readings shall be submitted to the Engineer.

2. Component Test

- a. Each new or modified device and appliance shall be functionally tested.
- b. New or modified signaling, initiating, notification and control device circuits shall be tested to confirm their integrity underground and short circuit conditions as required by their class.

C. Final Testing

The completed system shall be tested by the Contractor and witnessed by the Owner and the Engineer. The Owner and Engineer shall be notified of the proposed test date at least 96 hours in advance. The request for final testing shall be accompanied by the pre-test results, the Record Documents as required in Section 1.08 (Final Documentation), and a copy of the red-lines. The date and time for the test is subject to the approval of the Owner and Engineer. Testing shall be in

accordance with all applicable city building and fire codes, and the referenced NFPA codes, as well as the following specific requirements:

1. The 120 volt ac power to any new distributed power supplies or remote amplifiers shall be turned off 24 hours prior to the test time. The first test will put each system into alarm for five minutes. Battery voltage and current readings shall be taken by the Contractor to verify calculations and power supply capacities.
2. Engineer selected circuits shall be tested for shorts, grounds and open conditions. Appropriate fire alarm panel reaction, based on the circuit's style shall be verified.
3. Each new or modified initiating device or notification appliance shall be tested.
4. Transmission of all signals to the Fire Alarm Control Panel, and other auxiliary devices shall be verified.
5. Supervisory functions of all new or modified circuits and transmission of all fault signals to the Fire Alarm Control Panel shall be verified.

The Owner or Engineer may terminate the acceptance test at any time based on an unacceptable number or magnitude of deficiencies.

If the system fails the final test, the Contractor shall be responsible for the costs for the Owner and the Engineer for additional testing.

Final acceptance of the alarm system shall be based on satisfactory completion of all items listed above and trouble free operation for a period of 30 days after completion of the final acceptance test.

END OF SECTION 283100

SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Asphaltic concrete base course
 - 2. Asphaltic concrete paving wearing surface
- B. Related Sections:
 - 1. Section 312000 – Earth Moving
 - 2. Section 321313 – Concrete Paving

1.2 SUBMITTALS

- A. Submit in accordance with Division 1 unless otherwise indicated
- B. Asphaltic Concrete Design Mix: Submit for each class of mix
 - 1. Include description of method by which mix design was formulated and supporting backup data.
- C. Manufacturer: Submit asphalt plant name, address, and contact person

1.3 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Not less than 5 years experience in the actual production of specified products, plus the following:
 - 1. Asphalt mixing plant shall comply with APWA Street Construction and Material Specifications, Division 11, Section 2205.4.
- B. Installer's Qualifications: Firm experienced in installation of systems similar in complexity to those required for this Project, plus the following:
 - 1. Not less than 3 years experience with systems
 - 2. Successfully completed not less than 5 comparable scale projects using this system
- C. Product/Material Qualifications: All materials shall comply with APWA Street Construction and Material Specifications, as adopted by the City of Kansas City, Missouri Public Works Department.
- D. Regulatory Requirements.
 - 1. Comply with applicable requirements for paving work on public property.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping:

1. Comply with APWA Street Construction and Material Specifications, Division II, Section 2205, Paragraph 2205.5.

1.5 PROJECT CONDITIONS

A. Environmental Requirements:

1. Do not apply prime or tack coats when ambient temperature is less than 50 degrees F. or has been below 35 degrees F. for 12 hours immediately prior to time of application
2. Do not place asphalt when ambient air temperature or base surface temperature is less than 40 degrees F.
3. Do not place asphalt when base surface is wet or frozen, or contains an excess amount of moisture

PART 2 - PRODUCTS

2.1 MATERIALS

A. Asphalt Cement:

1. Comply with performance-graded system indicated in APWA Construction and Material Specification Section 2205.2A

B. Aggregate: Comply with APWA Street construction and Material Specifications, Division II, Section 2205.2B.

C. Mineral Filler: ASTM D242 finely ground particles of limestone, hydrated lime, or other mineral dust.

D. Tack Coat: Per APWA Section 2204

2.2 EQUIPMENT

A. Paving Equipment: Comply with APWA Street Construction and Material Specifications, Division II, Section 2205.7.

2.3 ASPHALT PAVING MIXES

A. Base Course: Comply APWA Street Construction and Material Specifications, Division II, Section 2205.3, RC-Type 1-01.

1. Recycled shingle is not allowed in mix design.

B. Wearing Course: Comply with APWA Street Construction and Material Specifications, Division II, Section 2205.3, Type 3-01.

1. Marshall stability: Not less than 1,800 pounds.
2. All surface course shall be virgin material.

C. Comply with applicable requirements for asphalt paving mixes on public property.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper and timely completion
 - 1. Verify subgrade has been proofrolled immediately prior to placement of pavements as specified under Section 312000
 - 2. Verify compacted subgrade has required moisture content and is ready to support paving and imposed loads
 - 3. Verify gradients and elevations of subgrade are correct
 - 4. Do not proceed until unsatisfactory conditions have been corrected

3.2 PREPARATION

- A. Surface Preparation:
 - 1. Remove loose and foreign material from surface to receive asphaltic concrete paving.

3.3 INSTALLATION

- A. Apply tack coat to previously constructed asphalt and portland cement concrete surfaces abutting or projecting into asphalt pavement, at a rate of 0.05 to 0.15 gallons per square yard of treated surface
 - 1. Do not soil adjoining surfaces which will remain exposed after completion of asphalt placement
 - 2. Allow tack coat to dry to proper condition to receive paving
- B. Install asphalt paving in accordance with APWA Street construction and Material Specifications, Division II, Section 2205.8.
- C. Place asphalt within 24 hours of applying tack coat or primer
- D. Weather limitations shall be per APWA Section 2205.8.
 - 1. Place asphalt in strips not less than 10 feet in width per APWA Section 2205.8
 - a. Place areas inaccessible by equipment by hand
 - 2. Place asphalt in compacted thickness indicated on Drawings, to required grade and cross-section.
- E. Compact asphalt by rolling to required density per APWA Section 2205.8
 - 1. Begin rolling operations when placed mixture will bear roller weight without excessive displacement of mixture
 - 2. After first strip has been placed and compacted, place succeeding strips and extend rolling to overlap previous strip
 - 3. Compact areas inaccessible to rolling equipment using hot hand tampers or vibrating plate compactors
 - 4. Perform rolling with consecutive passes to achieve even and smooth finish without roller marks

5. Continue rolling operations to attain the following laboratory Marshall densities when tested in accordance with ASTM D3549:
 - a. Base course: 95 percent
 - b. Wearing course: 97 percent

- F. Immediately correct surface irregularities in finish course
 1. Remove excess material forming high spots

- G. Joints: Make joints between existing and new pavement, and between successive days' Work, to ensure continuous bond between adjoining areas
 1. Construction joints shall have same texture, density, and smoothness as other sections of asphalt paving

- H. Tolerances:
 1. Flatness: Ponding of water in any depth shall not be acceptable
 2. Compacted thickness: Plus or minus ¼ inch of specified thickness

3.4 FIELD QUALITY CONTROL

- A. Tests: Owner will retain the services of an engineering inspection and testing firm. Contractor will be responsible for coordinating and scheduling inspection.
 1. Field testing shall be taken by testing agency as follows for compliance with tolerances specified in this Section
 - a. Thickness: ASTM D3549
 - b. Wearing course flatness: Test using 10 foot straight-edge applied parallel with and at right angles to centerline of pave areas
 - c. Crowned surface flatness: Test with crowned template centered and at right angle to crown
 - d. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to APWA.
 - 1) Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to APWA requirements, and compacted according to job-mix specifications.
 - 2) In-place density of compacted pavement will be determined by testing core samples according to latest ASTM standards.
 - a) One core sample will be taken for every 3000 sq. yd. or less installed base pavement.
 - b) One core sample shall be taken for every 5000 sq. yd. of installed surface. Cores shall be located on paint and stripe lines.
 - c) Field density of in-place compacted pavement may also be determined by nuclear method according to latest ASTM standards.
 - e. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.
 - f. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.5 PROTECTION

- A. Immediately after placement, protect pavement from traffic and mechanical injury until pavement has hardened and surface temperature is less than 140 degrees F.

END OF SECTION

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Driveways.
 - 2. Roadways.
 - 3. Parking lots.
 - 4. Curbs and gutters.
 - 5. Walks.
- B. Work in public right-of-way: All work in public right-of-way shall be performed per City Standards and Specifications.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each exposed product and for each color and texture specified.
- C. Other Action Submittals:
 - 1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.3 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- B. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.
- B. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.
- C. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420); deformed.

- D. Plain-Steel Wire: ASTM A 82/A 82M, as drawn.
- E. Deformed-Steel Wire: ASTM A 496/A 496M.
- F. Dowel Bars: ASTM A 615/A 615M, Grade 60. Cut bars true to length with ends square and free of burrs.
- G. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified.

2.2 CONCRETE MATERIALS AND MIXTURES

- A. For work within public right-of-way, comply with City Standards and Specifications.
- B. For work on private property: comply with KCMMB as follows:
 - 1. The 28 day compressive strength for concrete shall be 4,000 psi and designated as "KCMMB 4K". Mixes for High Early Strength Concrete shall meet the same requirements as stated below for standard 4K mix (designated as "KCMMB HE"), and any additional requirements noted below specific to High Early Strength Concrete. Compressive strength shall be determined in accordance with ACI 318. All mix designs shall have a unique number designated by the concrete supplier. This unique name must match the name on the concrete delivery ticket or the concrete will be rejected.
 - 2. Coarse aggregate shall be entirely granite, calcite cemented sandstone, quartzite, basalt, diabase, rhyolite, or trap rock. All coarse aggregate shall come from a large, accessible, uniform geological formation and be easily field identifiable in concrete. All coarse aggregate test results shall not exceed the following percentages by weight:

AASHTO T103 Soundness by Freeze/Thaw 50 cycles	Max. Allowable %
3/4 - 3/8	1.0%
3/8 - #4	2.0%
ASTM C127	
Absorption %	0.5%
ASTM C123 Lightweight Pieces	
% Light Weight Pieces	0.5%
ASTM C142 Clay Lumps and Friable	
% Deleterious	0.3%
Coal and Lignite	
% Coal and Lignite	0.05%
ATM C117 Material Finer than #200 by washing	
% Passing	0.5%
Sum of all deleterious	
% Total deleterious	1.0%

ASTM C88 Sulfate Soundness (MgSO4) Weighted % loss	
3/4 - 3/8	0.5%
3/8 - #4	4.0%
ASTM C131 LA Abrasion	
% Loss	28.0%

3. Coarse aggregates shall meet the gradation requirements of the current ASTM C33. The acceptable gradation sizes shall be number 1 through 7, 56, 57, 67, 357 or 467. Mix designs shall specify the gradation designation.
4. Limestone found in concrete mixes, delivered from centrally batched concrete plants shall not exceed 3% by weight of the coarse aggregate fraction. Limestone found in all other concrete mixes shall not exceed 2% by weight.
5. Fine aggregate shall meet the requirements set forth in the current ASTM C33. The percentage by weight of clay lumps and friable particles shall not exceed 0.25%. The percentage by weight of material passing the no. 200 sieve shall not exceed 2%. The percentage by weight of coal and lignite shall not exceed 0.25%. Soundness shall be determined using magnesium sulfate.
6. Aggregates in mixes must be proportioned to have a minimum of 55% coarse aggregate by weight.
7. Cementitious Materials: The total mass of cementitious materials shall be a minimum of 600 pounds per cubic yard of concrete and consist of one of the following options:
 - a. A minimum of 450 pounds per cubic yard of ASTM C 150 Type I, II, I/II, or III portland cement combined with one of the following:
 - 1) ASTM C 989 Grade 100 or 120 Ground Granulated Blast Furnace Slag (GGBFS) at a maximum of 25% of the combined total cementitious weight.
 - 2) ASTM C 618 Class F fly ash at a maximum of 25% of the combined total cementitious weight. In addition Loss on Ignition is limited to a maximum of 3.0%.
 - b. Manufactured ASTM C 595 Blended Hydraulic Cement Type IS or IP with the following limitations:
 - 1) Type IS – The slag constituent shall not exceed 25% of the mass of the combined portland cement and slag.
 - 2) Type IP – The pozzolan constituent shall not exceed 25% of the mass of the combined portland cement and pozzolan.
 - c. The total alkali content of the concrete shall be limited to the sum of the acid soluble alkali content of portland cement plus either one-sixth the alkali content of fly ash or one-half of the alkali content of slag, to a maximum of 5 lb/yd³.
 - 1) Note: Mortar Bar Expansion tests are required if the cementitious combination contains less than 25% GGBFS or Class F fly ash. If a mix design with less than 25% GGBFS or Class F fly ash is submitted, the mortar bar expansion shall be a maximum of 0.10% at 16 days when tested according to ASTM C 1567. The C 1567 test shall be performed on cementitious combinations submitted as noted above and include aggregate combinations from one of the three following options:
 - a) Test each coarse aggregate and percentage submitted with Missouri River sand obtained from the Holliday Sand Riverside Dredge. (For each cementitious combination tested, this option only allows this specific coarse aggregate source and percentage to meet the Mortar Bar Expansion test.)

- b) Test with 55% Pink Quartzite from the Dell Rapids Pit, Dell Rapids, South Dakota and 45% Missouri River sand obtained from the Holliday Sand Riverside Dredge. (For each cementitious combination tested, this option allows any approved coarse aggregate at 55% to meet the Mortar Bar Expansion test.)
 - c) Test using 100% Missouri River sand obtained from the Holliday Sand Riverside Dredge. (For each cementitious combination tested, this option allows any aggregate combination to meet the Mortar Bar Expansion test.)
 - 2) Regardless of which option above is used, all aggregate combinations must meet the rest of the KCMMB Specification. The Mortar Bar Expansion shall be a maximum of 0.10% at 16 days.
8. Water cement ratio shall not exceed 0.44. Only potable water shall be used. The minimum water cement ratio shall be 0.25.
9. Air Entrainment shall meet the requirements set forth in the current ASTM C260. The percentage of air content by volume shall be 6.5% plus/minus 1.5%. Mixes shall be designed for 6.5% air content. For precast manufacturing facilities that utilize dry cast concrete, air contents will be determined by taking three separate cores at random intervals throughout the KCMMB year. If submitting for the first time, drycast suppliers can receive conditional approval by submitting a mix design that meets all the KCMMB specifications except for air content. They will be conditionally approved until receiving results from the first air content test. The core locations will be specified by the participating KCMMB member after the project has been constructed. The cores shall be 4" diameter partial depth through walls of finished concrete products. Provide a Linear- Traverse Test (ASTM C457), Procedure A, on each core using the proposed mix design. Provided, for each mix design submitted, the average of the three tests is above 5% total air content, with no single sample being less than 4%, the facility will be approved to dry cast concrete structures using that mix until April 1st of the following year. Test results for each ASTM C457 test should include the total air content and the corresponding specific surface in square inches per cubic inch, the spacing factor in inches, and a recalculation of the air content, specific surface and spacing factor using bubbles with a size of 0.04" and less. If submitting the same mix design for the following year, the last three air test can be submitted for conditional air content approval.
10. All concrete delivery tickets shall include the plant name, design w/c ratio, batch weights per cubic yard, total batched weight of all materials for quantity delivered, time batched, design slump, water withheld (2 gal/yd maximum, no water shall be withheld from HE concrete), allowable slump range, moisture correction for aggregates, and dosages of all approved admixtures. Pre-cast concrete manufactures shall keep concrete delivery tickets on file for one year. Certifications for the pre -cast concrete shall be provided when the product is delivered to the job site.
11. For High Early mix designs, test results for the ASTM C 1074 shall be submitted. Compression tests may be performed at times other than those in ASTM C 1074 provided the tests occur within the time limits of ASTM C 1074 and give the majority of data points early in the time frame. Control of Slump, time of set, and workability shall be controlled by use of admixtures only, NO water shall be withheld from a high early mix.

2.3 CURING MATERIALS

- A. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

2.4 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber.
- B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.
- B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.4 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.

- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, to match jointing of existing adjacent concrete paving.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch (6-mm) radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.5 CONCRETE PLACEMENT

- A. Moisten subbase to provide a uniform dampened condition at time concrete is placed.
- B. Comply with ACI 301 (ACI 301M) requirements for measuring, mixing, transporting, placing, and consolidating concrete.
- C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- D. Screed paving surface with a straightedge and strike off.
- E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.6 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.
 - 2. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.
 - 3. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch (1.6 to 3 mm) deep with a stiff-bristled broom, perpendicular to line of traffic.
- C. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on paving surface according to manufacturer's written instructions.
 - 1. Cure concrete with curing compound recommended by slip-resistive aggregate manufacturer. Apply curing compound immediately after final finishing.
 - 2. After curing, lightly work surface with a steel wire brush or abrasive stone and water to expose nonslip aggregate.

3.7 COLD AND HOT WEATHER CONCRETE PLACEMENT

A. Cold Weather Concrete:

1. Unless authorized in writing by the Engineer, mixing and concreting operations shall be discontinued when the descending air temperature in the shade and away from artificial heat reaches thirty-five (35°) degrees F. Concrete operations may be resumed when the ascending air temperature in the shade and away from artificial heat reaches thirty five (35°) degrees F.
2. When concrete work is authorized during cold weather, the concrete may be heated in accordance with ACI specifications. The temperature of the concrete shall be not less than sixty (60°) degrees F and not more than eighty (80°) degrees F at the time of placement in the forms.
3. No concrete shall be placed on frozen subgrade. Sudden cooling of concrete shall not be permitted. Concrete exposed to frost action or freezing weather shall be removed and replaced at the Contractor's expense.
4. A sufficient supply of approved blanketing material shall be provided and placed on all concrete placed between November 1 and April 1 and at other times when the ambient air temperature is expected to drop below forty (40°) degrees F. Blanketing materials shall protect the concrete and maintain a minimum temperature of forty (40°) degrees F in the concrete as measured on the surface. Concrete shall be covered for at least four days.

B. Hot Weather Concrete:

1. The provisions of this section shall apply to all concrete work, which is done when the air temperature is above eighty (80°) degrees F at the time of placement. The temperature of the concrete, when placed, shall not be high enough to cause excessive loss of slump, flash set or cold joints. Forms, reinforcing and sub-grade surfaces against which the concrete is to be placed shall be wetted down immediately before placement. In no case shall the temperature of the concrete, when placed, exceed ninety (90°) degrees F.
2. When the air temperature exceeds ninety (90°) degrees F and as soon as practicable without causing damage to the surface finish, all exposed concrete shall be kept continuously moist by means of fog sprays, wet burlap, cotton mats, or other means acceptable to the Engineer at no expense to the Owner. This cooling with water shall be in addition to the initial sealing by membrane curing compound.
3. **No concrete shall be placed when the air temperature is above ninety-five (95°) degrees F.**

3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

- E. Curing Methods: Cure concrete by curing compound.

3.9 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows:
 - 1. Elevation: $3/4$ inch (19 mm).
 - 2. Thickness: Plus $3/8$ inch (10 mm), minus $1/4$ inch (6 mm).
 - 3. Surface: Gap below 10-foot- (3-m-) long, unlevelled straightedge not to exceed $1/2$ inch (13 mm).
 - 4. Joint Spacing: 3 inches (75 mm).
 - 5. Contraction Joint Depth: Plus $1/4$ inch (6 mm), no minus.
 - 6. Joint Width: Plus $1/8$ inch (3 mm), no minus.

3.10 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Engineer.
- B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313