



Riley County, Kansas

**Site Accessibility
Pottorf Hall – CICO Park**

Riley County Public Works Department
6215 Tuttle Creek Blvd.
Manhattan, Kansas 66503

August, 2019

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INVITATION TO BID

Sealed Bids will be received by Riley County, Kansas at the Office of the County Clerk for:

**Site Accessibility
Pottorf Hall – CICO Park**

Bids will be accepted until 8:30 AM on the 29th day of August, 2019 at the Office of the County Clerk, located in the Riley County Office Building, 110 Courthouse Plaza, Manhattan, KS. Bids will be opened and read aloud at 9:35 AM on Thursday, August 29th, 2019 during the Board of County Commissioners meeting at the Courthouse Plaza East Building, 115 No. 4th, Manhattan, KS.

Principal Items of Work:

Construction of concrete ADA sidewalk and metal handrail as denoted in the plans and specifications.

Copies of the Drawings and other Contract Documents are on file and available for public inspection at the Office of the County Clerk, located in the Riley County Office Building, 110 Courthouse Plaza, Manhattan, KS and The Ebert Mayo Design Group, 1115 Westport Dr., Manhattan, KS 66502 Tel. No. 785-776-1800.

Copies of plans and specifications can be viewed and obtained on-line at www.EMGArch.com in the Plan Room. Additional assistance is available at The Ebert Mayo Design Group, 1115 Westport Dr., Manhattan, KS 66502, Tel. No. 785-776-1800.

No Bidder may withdraw a bid for a period of 30 days following the opening of Bids.

All bidders must be on the plan holders list to be eligible. Interested bidders must contact The Ebert Mayo Design Group to be placed on the bidders list.

The character and amount of security to be furnished by each Bidder is stated in the above mentioned Contract Documents.

Completion Date, the Proposed Start Date, and Bid Amount will all be considered in the award of this Bid.

The Riley County Board of Commissioners reserves the right to reject any and all Bids, to waive formalities in considering Bids and to accept the Bid which, in the Board's opinion, is in the best interest of Riley County.

By Riley County Clerk


Rich Vargo

INSTRUCTIONS TO BIDDERS

1. Each proposal shall be legibly typed, written, or printed in ink, on the proposal form provided in this bound copy of proposed Contract Documents. All blank spaces for bid prices on the proposal form must be filled in and the proposal form must be fully completed and executed when submitted. No alterations in proposals, or in the printed forms therefore, by erasures, interpolations, or otherwise will be acceptable unless each such alteration is signed or initialed by the bidder; if initialed, the Owner may require the bidder to identify any alteration so initialed. No alteration in any proposal, or in the proposal form on which it is submitted, shall be made by the person after the proposal has been submitted by the bidder. Any and all addendums to the Contract Documents on which a proposal is based, properly signed by the bidder, shall accompany the proposal when submitted. **All bidders must be on the plan holders list to be eligible.**

Each proposal, with all attached documents submitted, shall be enclosed in a sealed envelope, addressed to Riley County, identified on the outside with words, Site Accessibility Pottorf Hall – CICO Park.

2. Each proposal shall be accompanied by either a cashier's check, a certified check drawn on an acceptable bank, or an acceptable bid bond, in an amount of not less than 5% of the total amount of the bid, made payable without conditions to Riley County, hereinafter referred to as the Owner, and the amount of the said Proposal Guarantee may be retained by and forfeited to the Owner as liquidated damages if the proposal covered thereby is accepted and a contract based thereon is awarded and the bidder should fail to enter into a contract in the form prescribed, with legally responsible sureties, within 14 days after the notice of award is made by the Owner.

The proposal guarantee deposit of the bidder will be returned if and when his proposal is rejected. The proposal guarantee deposit of the bidder to whom a contract is awarded will be returned provided, and when, said successful bidder executes a contract and files satisfactory bonds as hereinafter stipulated. The proposal guarantee deposit of the second lowest responsible bidder may be retained for a period of not to exceed sixty (60) days pending the execution of the contract and bonds by the successful bidder.

3. Each bidder shall carefully examine the Plans, Specifications, and other Contract Documents, shall visit the site and fully inform himself of all conditions affecting the work or the cost thereof, and shall be presumed to have done so and his bid shall be based upon his own conclusions from such examination. Each bidder shall inform himself concerning all Federal, State, and local laws, ordinances or regulations which may in any manner affect his proposed operations of constructions, or those engaged or employed on the work or the material or equipment. Should a bidder find discrepancies in or omissions from the Plans, Specifications, or other Contract Documents, he should at once notify the Engineer and obtain clarification or interpretation prior to submitting any bid. Any interpretation of the proposed Contract Documents will be made only by addendum duly issued and a copy of such addendum will be mailed or delivered to each person obtaining a set of such documents from the Engineer. The Owner will not be responsible for any other explanations or interpretations of the proposed Contract Documents.

4. No bidder may submit more than one proposal. Two proposals under different names will not be received from one firm or association.

5. No bidder may withdraw his proposal for a period of **30** days after the date and hour set for the opening herewith. A bidder may withdraw his proposal at any time prior to the expiration of the period during which proposals may be submitted, by written request of the same persons or person who signed the proposal.
6. The Owner reserves the right to accept the bid which, in its judgment, is the lowest responsive, responsible bid on the basis of the lowest priced approved equipment and/or material; to reject any or all bids; and to waive irregularities or informalities in any bid submitted. Bids received after the specified time of closing will be returned unopened.
7. In case of discrepancy between the Gross Sum shown in the Proposal and that obtained by adding the products of the quantities of work and the Unit Prices, Bidder agrees that the Unit Prices shall govern, and any errors found in said products and Gross Sum may be corrected by the Owner.
8. Unbalanced proposals in which the prices for some items are out of proportion to the prices for other items will be considered sufficient for disqualification of Bidder and the rejection of his proposal.
9. Bidders are welcome to be present at the opening of Bids. All Bids shall be made and received with the express understanding that the bidder accepts the terms and conditions set forth in the Contract Documents.
10. Before award of the Contract, each successful Bidder will be required to satisfy the Owner as to his experience and competence to construct the Work; his integrity and reliability in carrying out the provisions of his bonds; and his resources for the vigorous prosecution of the work.
11. A contract will be awarded to the best responsible Bidder, as determined by the Owner, as soon as practicable after the opening of all Bids. **Calendar Days, Proposed Start Date, and Bid Amount will all be considered in awarding of the bid.** The successful Bidder will be notified in writing, or otherwise, of the award of the Contract.
12. Each successful Bidder shall retain in his possession all sets of the Contract Documents obtained by him for bidding purposes and the refund of deposits to unsuccessful Bidders for said Contract Documents will be made as specified in the Invitation to Bid. Additional sets of Contract Documents required for official execution of the contract and for construction purposes, up to a total of 3 sets including those retained by the successful Bidders, will be furnished upon application and without further charge. Any extra sets requested by successful Bidders will be supplied at \$2.00 per sheet for plans and .25 cents per sheet for specifications.
13. Each bidder shall sign his proposal, using his usual signature and giving his full business address. Bids by partnerships shall be signed with the partnership name followed by the signature of one of the members of the partnership or by an authorized representative and designation of the person signing. Bids by corporations shall be signed with the name of the corporation, followed by the signature and designation of the president, secretary, or other person.
14. If requested, prior to signing the contract, the Contractor shall submit on a form acceptable to the Owner and Engineer, a carefully prepared Progress Schedule, showing the proposed dates of starting and completing each of the various sections of the work, the anticipated monthly payments to become due the Contractor, and the accumulated percent of progress each month.

15. Bidders must satisfy themselves by personal examination of the location of the proposed work, by examination of the Plans and Specifications and requirements of the work and the accuracy of the estimate of the quantities of the work to be done, and shall not at any time after the submission of a bid, dispute, or complaint of such estimate or assert that there was any misunderstanding in regard to the nature or amount of work to be done.

16. **Sales Tax Exemption.** Attention is directed to the requirements of the General Conditions regarding payment of taxes and obtaining permits. All taxes that are lawfully assessed against the Owner or Contractor in connection with the work shall be paid by the Contractor. The prices named in the Proposal shall include all such taxes and fees.

This project does qualify for sales tax exemption.

Within ten (10) days after the date of contract, the Owner will request a Kansas sales tax exemption certificate number for the Project. The Contractor and each subcontractor or repairman must furnish the exemption certificate number to each supplier on the Kansas Sales Tax Division Form STD 74. The exemption certificate number shall be placed on all invoices for materials to be incorporated in the work. The Contractor shall furnish copies of all such invoices to the Owner who is required by law to hold them for 5 years.

Upon completion of the work, the Contractor shall file with the Owner a notarized statement that all purchases made under the exemption certificate were entitled to be exempt from the Kansas Retailers' Sales Tax and the Kansas Compensating Tax. The Owner is required to file such a certified statement with the State of Kansas.

The Contractor shall assume full responsibility for proper use of the exemption certificate number and shall pay all legally assessed penalties for improper use of the certificate number.

17. The type of material or product designated shall be furnished and installed unless a change in type of material or product is requested by the Contractor and approved by the Engineer. Approved substitute shall be at the contract unit price bid.

The Owner reserves the right to change any of the types of material or product designated by the successful bidder to some other permitted material or product on any bid item. The change shall be in accordance with the provisions of the General Conditions.

18. Upon award of the Contract, the Contractor shall order all materials required, arrange for their orderly delivery and prepare for their handling and storage upon delivery at the site; shall schedule the mobilization of construction equipment and working crews; and shall make all such additional preparations as required for the vigorous and orderly prosecution of the Work to completion as rapidly as possible. If said Work is not prosecuted with due diligence, the Contract may be terminated by the Owner as set forth in the General Conditions.

19. The Contractor shall file with the Owner and the Engineer, written notice of the date upon which he shall actually begin work allowing at least one week for the Owner and Engineer to assign and transfer personnel and complete other preparatory measures. The calendar date thus established by the Contractor will be considered as the effective date of commencement of Work, and the Contractor shall complete the entire work incidental to final acceptance, including clean-up, within the number of

working days specified in the Bid; otherwise, liquidated damages will be assessed for each eligible working day required for completion.

20. All quantities shown on the plans that are designated "For Information Only" are for plan convenience and it shall be the responsibility of the Contractor to check and satisfy himself as to the accuracy of these quantities prior to submitting his bid.

21. When the work is a Lump Sum Contract, the quantities listed in the Bid form are to be considered as exact. When the work is not under a Lump Sum Contract, the quantities listed in the Bid form are to be considered as approximate and are to be used only for the comparison of Bids. Payment to the Contractor will be made only for the actual quantities of work performed in accordance with the applicable Contract Documents. Should the final estimate of quantity show an increase or decrease from the original quantities indicated, the unit price stated in the Bid will prevail. The Owner reserves the right to increase or decrease any or all of the quantities shown in the estimate of quantities in the bid form, provided the money values of such increases or decreases or omissions does not exceed 20% of the principal Contract Price, without in any way invalidating the Bid prices.

22. Contracts for work under this proposal will obligate the contractors and subcontractors not to discriminate in employment practices. Bidders must, if requested, submit a compliance report concerning their employment practices and policies and their subcontractor's employment practices and policies in order to maintain their eligibility to receive the award of the contract.

23. Nonresident contractors who are individuals or partnerships and nonresident corporations not already registered with the Secretary of State are required to register with the Secretary of Revenue and to file a bond to assure payment of taxes, if the total contract price or compensation to be received amounts to more than \$10,000 (K.S.A. 2017 Supp. 79-1009, K.S.A. 2017 Supp. 79-1010).

BID PROPOSAL

TO THE BOARD OF COUNTY COMMISSIONERS RILEY COUNTY, KANSAS

The Undersigned Hereby certifies that he/she has examined carefully the Drawings, Technical Provisions and other Contract Documents; that he/she has investigated fully the location, character and extent of work to be done and materials to be furnished in connection with construction of:

Site Accessibility Pottorf Hall – CICO Park.

For Riley County and that he/she is familiar with the type of construction work involved within the scope of the Contract. All work to comply with the Uniform Plumbing Code and International Plumbing Code, and according to regulations set by Kansas Department of Health and Environment project.

1. The Undersigned hereby proposes to furnish the specified Bonds, Certificates of Insurance and any other required documents within 14 days after award of Contract.
2. THE CALENDAR DAYS ASSIGNED TO THIS PROJECT WILL BE PART OF THE PROPOSED BID.
3. The amount of liquidated damages for each day will be as shown in the table below

TABLE OF LIQUIDATED DAMAGES

ORIGINAL CONTRACT AMOUNT (Total amount of the Bid)		Amount of liquidated damages to be deducted for each day of overrun in contract time
From more than	To and including	
\$0.00	\$25,000.00	\$75.00
\$25,000.00	\$50,000.00	\$125.00
\$50,000.00	\$100,000.00	\$200.00
\$100,000.00	\$500,000.00	\$400.00
\$500,000.00	\$1,000,000.00	\$600.00
\$1,000,000.00	\$2,000,000.00	\$925.00
\$2,000,000.00	\$5,000,000.00	\$1,375.00
\$5,000,000.00	\$10,000,000.00	\$2,000.00
Over \$10,000,000.00		\$3,000.00

4. The Undersigned hereby acknowledges receipt of the following Addenda:

ADDENDUM NO.	DATED
_____	_____
_____	_____

5. The Bid Security attached is furnished to the Owner as a guarantee that the Agreement will be executed and Performance Bond and Statutory Bond furnished within fourteen (14) days after notice of award of the contract to the undersigned Bidder. Should the Bidder neglect or refuse to enter into contract and to furnish bond acceptable to the Owner, the bid security shall be forfeited and become the property of the Owner.
6. The Undersigned proposes to furnish all tools, appliances, equipment, materials and labor required to perform and complete the improvements in a thorough, workmanlike and satisfactory manner, in accordance with the Drawings, Technical Provisions and other Contract Documents attached hereto, for the prices included in this Bid proposal.
7. The contractor is hereby advised that the Statutory Bond must be presented to the Engineer before the Notice to Proceed will be issued. Riley County Public Works will retain one (1) copy and file the Original with the Clerk of the District Court.

Project Description: **Site Accessibility Pottorf Hall – CICO Park.**

Bidder will complete the Work for the following price(s):

ITEMS	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1. Site Accessibility Pottorf Hall – CICO Park	1	LS		_____
			TOTAL BID	_____

Proposed Number of Calendar Days: _____

Proposed Starting Date: _____

Dated this _____ day of _____, 2018

Bidder: _____ By: _____

Title _____ Signature: _____

SECTION 03 3000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with fly ash, subject to compliance with requirements.
- B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.3 ACTION SUBMITTALS

- A. Product Data: For each of the following.
 - 1. Portland cement.
 - 2. Fly ash.
 - 3. Aggregates.
 - 4. Admixtures:
 - a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.
 - 5. Curing materials.
- B. Design Mixtures: For each concrete mixture, include the following:
 - 1. Mixture identification.
 - 2. Minimum 28-day compressive strength.
 - 3. Durability exposure class.
 - 4. Maximum w/cm.
 - 5. Slump limit.
 - 6. Air content.
 - 7. Nominal maximum aggregate size.
 - 8. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
 - 9. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Curing compounds.

1.5 QUALITY ASSURANCE

- A. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.
- B. Field Quality Control Testing Agency Qualifications: An independent agency, qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with ASTM C94/C94M and ACI 301.

1.7 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.
 - 1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 - 3. Do not use frozen materials or materials containing ice or snow.
 - 4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.
 - 5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:
 - 1. Maintain concrete temperature at time of discharge to not exceed 95 deg F.
 - 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301.

2.2 CONCRETE MATERIALS

- A. Source Limitations:
 - 1. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
 - 2. Obtain aggregate from single source.
 - 3. Obtain each type of admixture from single source from single manufacturer.
- B. Cementitious Materials:
 - 1. Portland Cement: ASTM C150/C150M, Type I/II, gray.
 - 2. Fly Ash: ASTM C618, Class C or F.
- C. Normal-Weight Aggregates: ASTM C33/C33M, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.
 - 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Air-Entraining Admixture: ASTM C260/C260M.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do 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 C494/C494M, Type A.
 - 2. Retarding Admixture: ASTM C494/C494M, Type B.
 - 3. Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
 - 5. High-Range, Water-Reducing and -Retarding Admixture: ASTM C494/C494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II.
- F. Water and Water Used to Make Ice: ASTM C94/C94M, potable.

2.3 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- B. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.
 - 1. Color:
 - a. Ambient Temperature Below 50 deg F: Black.

- b. Ambient Temperature between 50 deg F and 85 deg F: Any color.
- c. Ambient Temperature Above 85 deg F: White.
- C. Curing Paper: Eight-foot-wide paper, consisting of two layers of fibered kraft paper laminated with double coating of asphalt.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming, Dissipating Curing Compound: ASTM C309, Type 1, Class B.

2.4 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber or ASTM D1752, cork or self-expanding cork.

2.5 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
 - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand, as recommended by underlayment manufacturer.
 - 4. Compressive Strength: Not less than 4100 psi at 28 days when tested in accordance with ASTM C109/C109M.
- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
 - 2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
 - 4. Compressive Strength: Not less than 5000 psi at 28 days when tested in accordance with ASTM C109/C109M.

2.6 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, in accordance with ACI 301.
 - 1. Use a qualified 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: 25 percent by mass.
- C. Admixtures: Use admixtures in accordance with 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, and concrete with a w/cm below 0.50.

2.7 CONCRETE MIXTURES

- A. Class A: Normal-weight concrete used for footings.
 - 1. Minimum Compressive Strength: 3000 psi at 28 days.
 - 2. Slump Limit: 4 inches, plus or minus 1 inch.
- B. Class B: Normal-weight concrete used for walls.
 - 1. Minimum Compressive Strength: 3000 psi at 28 days.

- 2. Slump Limit: 4 inches, plus or minus 1 inch.
- C. Class C: Normal-weight concrete used for slabs-on-ground.
 - 1. Minimum Compressive Strength: 4000 psi at 28 days.
 - 2. Slump Limit: 4 inches, plus or minus 1 inch.

2.8 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete in accordance with ASTM C94/C94M, and furnish batch ticket information.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 - 1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
 - 2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Secure facilities for storage, initial curing, and field curing of test samples, including continuous electrical power.
 - 4. Security and protection for samples and for testing and inspection equipment at Project site.

3.3 INSTALLATION OF 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.
 - 1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.4 JOINTS

- A. Construct joints true to line, with faces perpendicular to surface plane of concrete.
- B. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into equal areas no more than ten feet o.c. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:
 - 1. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

3.5 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.
 - 1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
 - 2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.
- B. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket.
 - 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 is placed on concrete that has hardened enough to cause seams or planes of weakness.
 - 1. If a section cannot be placed continuously, provide construction joints.
 - 2. Deposit concrete to avoid segregation.
 - 3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
 - 4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301.
 - a. Do not use vibrators to transport concrete inside forms.
 - b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
 - c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
 - d. 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. Level concrete, cut high areas, and fill low areas.
 - 5. Slope surfaces uniformly to drains where required.
 - 6. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
 - 7. Do not further disturb slab surfaces before starting finishing operations.

3.6 FINISHING FORMED SURFACES

- A. As-Cast Surface Finishes:
 - 1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material.
 - a. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep.
 - b. Remove projections larger than 1 inch.
 - c. Tie holes do not require patching.
 - d. Surface Tolerance: ACI 117 Class D.
 - e. Apply to concrete surfaces not exposed to public view.
 - 2. ACI 301 Surface Finish SF-3.0:
 - a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
 - b. Remove projections larger than 1/8 inch.
 - c. Patch tie holes.
 - d. Surface Tolerance: ACI 117 Class A.
 - e. Locations: Apply to concrete surfaces exposed to public view, to receive a rubbed finish.
- B. Rubbed Finish: Apply the following to as cast surface finishes where exposed to public view:
 - 1. Grout-Cleaned Rubbed Finish:
 - a. Clean concrete surfaces after contiguous surfaces are completed and accessible.
 - b. Do not clean concrete surfaces as Work progresses.
 - c. Mix 1 part portland cement to 1-1/2 parts fine sand, complying with ASTM C144 or ASTM C404, by volume, with sufficient water to produce a mixture with the consistency of thick paint. Add white portland cement in amounts determined by trial patches, so color of dry grout matches adjacent surfaces.
 - d. Wet concrete surfaces.
 - e. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap, and keep surface damp by fog spray for at least 36 hours.

3.7 FINISHING SLABS

- A. Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish:
 - 1. When bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operation of specific float apparatus, consolidate concrete surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.
 - 2. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture and complies with ACI 117 tolerances for conventional concrete.
 - 3. Finish and measure surface, so gap at any point between concrete surface and an unlevelled, freestanding, 10-ft.-long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch.
 - 4. 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.

3.8 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

- A. Filling In:
 - 1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
 - 2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
 - 3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.9 CONCRETE CURING

- A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
 - 1. Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.
 - 2. Comply with ACI 301 and ACI 305.1 for hot-weather protection during curing.
- B. Curing Formed and Unformed Surfaces: Comply with ACI 308.1 as follows:
 - 1. Cure formed concrete surfaces.
 - 2. If forms remain during curing period, moist cure after loosening forms.
 - 3. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:
 - a. Continuous Fogging: Maintain standing water on concrete surface until final setting of concrete.
 - b. Continuous Sprinkling: Maintain concrete surface continuously wet.
 - c. Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to absorptive material to maintain concrete surface continuously wet.
 - d. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.
 - e. Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.
 - 1) Recoat areas subject to heavy rainfall within three hours after initial application.
 - 2) Maintain continuity of coating and repair damage during curing period.

3.10 TOLERANCES

- A. Conform to ACI 117.

3.11 CONCRETE SURFACE REPAIRS

- A. Defective Concrete:
 - 1. Repair and patch defective areas when approved by Architect.
 - 2. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

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- 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 in any dimension to solid concrete.
 - a. Limit cut depth to 3/4 inch.
 - b. Make edges of cuts perpendicular to concrete surface.
 - c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
 - d. Fill and compact with patching mortar before bonding agent has dried.
 - e. 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 matches surrounding color.
 - a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
 - b. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces:
1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.
 - a. Correct low and high areas.
 - b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
 2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 3. After concrete has cured at least 14 days, correct high areas by grinding.
 4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.
 - a. Finish repaired areas to blend into adjacent concrete.
 5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.
 - a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 - b. Feather edges to match adjacent floor elevations.
 6. Correct other low areas scheduled to remain exposed with repair topping.
 - a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
 - b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 7. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.
 - a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch clearance all around.
 - b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
 - c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
 - d. Place, compact, and finish to blend with adjacent finished concrete.
 - e. Cure in same manner as adjacent concrete.
 8. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.
 - a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
 - b. Dampen cleaned concrete surfaces and apply bonding agent.
 - c. Place patching mortar before bonding agent has dried.
 - d. Compact patching mortar and finish to match adjacent concrete.
 - e. Keep patched area continuously moist for at least 72 hours.
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- 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.

3.12 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
 - 1. Testing agency shall immediately report to Architect, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
 - 2. Testing agency shall report results of tests and inspections, in writing, to Owner, Architect, Contractor, and concrete manufacturer within 48 hours of inspections and tests.
 - a. Test reports shall include reporting requirements of ASTM C31/C31M, ASTM C39/C39M, and ACI 301, including the following as applicable to each test and inspection:
 - 1) Project name.
 - 2) Name of testing agency.
 - 3) Names and certification numbers of field and laboratory technicians performing inspections and testing.
 - 4) Name of concrete manufacturer.
 - 5) Date and time of inspection, sampling, and field testing.
 - 6) Date and time of concrete placement.
 - 7) Location in Work of concrete represented by samples.
 - 8) Date and time sample was obtained.
 - 9) Truck and batch ticket numbers.
 - 10) Design compressive strength at 28 days.
 - 11) Concrete mixture designation, proportions, and materials.
 - 12) Field test results.
 - 13) Information on storage and curing of samples before testing, including curing method and maximum and minimum temperatures during initial curing period.
 - 14) Type of fracture and compressive break strengths at seven days and 28 days.
- B. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.
- C. Inspections:
 - 1. Verification of use of required design mixture.
 - 2. Concrete placement, including conveying and depositing.
 - 3. Curing procedures and maintenance of curing temperature.
- D. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M shall be performed in accordance with the following requirements:
 - 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
 - a. When frequency of testing provides 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.
 - 2. Slump: ASTM C143/C143M:
 - a. 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.
 - b. Perform additional tests when concrete consistency appears to change.
 - 3. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete.
 - a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - 4. Concrete Temperature: ASTM C1064/C1064M:
 - a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.

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5. Compression Test Specimens: ASTM C31/C31M:
 - a. Cast and laboratory cure two sets of four 6-inch by 12-inch cylinder specimens for each composite sample.
 6. Compressive-Strength Tests: ASTM C39/C39M.
 - a. Test one set of one laboratory-cured specimen at seven days and one set of two specimens at 28 days.
 - b. Retain one specimen for additional testing as directed by the Architect.
 - c. 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.
 7. 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 if specified compressive strength is 5000 psi, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.
 8. 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.
 9. Additional Tests:
 - a. 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.
 - b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Architect.
 - 1) Acceptance criteria for concrete strength shall be in accordance with ACI 301 section 1.6.6.3.
 10. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 11. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

3.13 PROTECTION

- A. Protect concrete surfaces as follows:
 1. Protect from petroleum stains.
 2. Diaper hydraulic equipment used over concrete surfaces.
 3. Prohibit vehicles from interior concrete slabs.
 4. Prohibit use of pipe-cutting machinery over concrete surfaces.
 5. Prohibit placement of steel items on concrete surfaces.
 6. Prohibit use of acids or acidic detergents over concrete surfaces.

END OF SECTION 03 3000

SECTION 05 5213 - PIPE RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes hot-dip galvanized steel pipe and tube handrails and guardrails for exterior locations.

1.2 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Railing materials.
 - 2. Grout and anchoring cement.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Sample: Provide an assembled composite sample demonstrating the quality of each type of weld and bend to be encountered in the project.

1.3 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.4 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.5 PROJECT CONDITIONS

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

1.6 COORDINATION AND SCHEDULING

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

PART 2 - PRODUCTS

2.1 METALS, GENERAL

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

2.2 STEEL AND IRON

- A. 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.
- B. Steel Tubing: ASTM A 500/A 500M, cold-formed steel tubing.
- 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.

2.3 FASTENERS

- A. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated.
 - 1. Hot-Dip Galvanized Railings: Type 304 stainless-steel or hot-dip zinc-coated steel fasteners complying with ASTM A 153/A 153M or ASTM F 2329 for zinc coating.

2.4 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- C. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.

2.5 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Assemble railings in the shop to greatest extent possible to minimize field welds. Clearly mark units for assembly and coordinated installation.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with welded connections.
- H. Welded Connections: Provide welded steel joint construction meeting Type 2 joint finish standard developed by the National Ornamental & Miscellaneous Metals Association (NOMMA).
 - 1. Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - b. Obtain fusion without undercut or overlap.
 - c. Remove flux immediately.
 - d. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- I. Form changes in direction by bending or by inserting prefabricated elbow fittings.
- J. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- K. Close exposed ends of railing members with prefabricated end fittings.
- L. Provide returns at ends handrails unless otherwise indicated.
- M. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.
- N. Provide inserts and other anchorage devices for connecting railings to concrete work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.

2.6 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.7 STEEL AND IRON FINISHES

- A. Galvanized Railings:
 - 1. Hot-dip galvanize exterior steel and iron 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.
 - 4. Fill vent and drain holes that will be exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
- B. Provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine assemblies where reinforced to receive anchors to verify that locations of concealed reinforcements have been clearly marked for Installer. Locate reinforcements and mark locations if not already done.

3.2 INSTALLATION, GENERAL

- A. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
 - 1. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 - 2. 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. Adjust railings before anchoring or welding to ensure matching alignment at abutting joints.
- C. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.3 RAILING CONNECTIONS

- A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.

3.4 ANCHORING POSTS

- A. Anchoring Posts in Concrete: Provide the following:
 - 1. 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 or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
 - 2. Leave anchorage joint exposed with 1/8-inch buildup, evenly sloped away from post.
- B. Attaching Posts to Concrete: Provide through-bolt connections as shown on the Drawings.

3.5 ADJUSTING AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas. Repair hot-dip galvanizing to comply with the following:
 - 1. Hot Galvanizing Repair Low-Melting Point Zinc Alloy Repair Rods:
 - a. Zinc Cadmium: Liquid temperature 518°F-527°F.
 - b. Zinc-Tin Copper Alloys: Liquid temperature 660°F-670°F.
 - 1) Zinc-tin copper alloys must be applied while in a semi-solid state in the preferred application temperature range from 480°F-570°F.
 - 2. Repair Procedures Using Zinc-Based Solder:
 - a. Surfaces must be cleaned using a wire brush, a light grinding action or a mild blasting. To ensure a smooth reconditioned coating can be affected, surface preparation shall extend into the surrounding, undamaged galvanized coating.

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- b. If the area to be repaired includes welds, all weld flux residue and weld spatter shall be removed by wire brush, chipping, grinding or power scaling.
 - c. Areas to be repaired shall be preheated to at least 600°F.
 - 1) Do not heat the surface over 750°F or allow the surrounding galvanized coating to be burned. Wirebrush the surface to be reconditioned during preheating and pre-flux.
 - a) Pre-flux is required when solder will not adhere to steel surface.
 - d. Rub the cleaned, preheated welds/areas with the repair rod to deposit an evenly distributed layer of zinc alloy.
 - e. Thickness shall match original hot-dip galvanizing.
 - f. Rinse with water or wipe with a damp cloth to remove flux residue.

3.6 PROTECTION

- A. Protect finishes of railings from damage during construction period.

END OF SECTION 05 5213

SECTION 07 9200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes silicone joint sealants.

1.2 ACTION SUBMITTALS

- A. Product Data: For joint-sealant product indicated.
- B. Samples for Verification: For each kind and color of joint sealant required, provide Samples of one of the following:
 - 1. Manufacturer's actual samples.
 - 2. Joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

1.3 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 MANUFACTURERS

- A. Manufacturers: Provide products by the Pecora Corporation or equal products by the following manufacturers:
 - 1. Dow Corning Corporation.
 - 2. GE Advanced Materials – Silicones.
 - 3. Sika Corporation, Construction Products Division.
 - 4. Tremco Incorporated.

2.3 SILICONE JOINT SEALANTS

- A. Single-Component, Nonsag, Traffic-Grade, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use T.
 - 1. Products: Pecora Corporation; 301 NS, 311 NS.

2.4 JOINT SEALANT BACKING

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

- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bicellular material with a surface skin), or any of the preceding types, 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.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
 3. Remove laitance and form-release agents from concrete.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

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- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
 - D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
 - E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
 - F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

3.4 CLEANING

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

3.5 PROTECTION

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

3.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in horizontal traffic surfaces.
 - 1. Joint Locations:
 - a. Control and expansion joints in cast-in-place concrete slabs.
 - b. Joints between cast-in-place concrete slabs and curbs, walls, and other construction than slabs.
 - 2. Silicone Joint Sealant: Single component, nonsag, traffic grade, neutral curing. Single component, pourable, traffic grade, neutral curing may be used at locations with a slope of less than 1 percent.

END OF SECTION 07 9200

SECTION 26 0100 - BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL

- A. All work covered by this section of these specification shall be accomplished in accordance with the respective drawings, information or instructions to bidders, general requirements, and the general conditions of these specifications. Any supplementary conditions, special conditions, addenda, or directives which may be issued by the Engineer herewith or otherwise shall be complied with in every respect.
- B. Connect new work to existing work in neat and approved manner. Restore existing work disturbed to original condition.
- C. Existing systems shall be left in perfect working order upon completion of all new work.
- D. Removed existing materials and equipment shall become Contractor's property and shall be disposed of off of Owner's property legally. Do not offer for sale on the Owner's property.

1.2 SUB-CONTRACTOR QUALIFICATIONS

- A. Sub-Contractor (as a company) and his job superintendent for their portion of the work shall have at least three years of satisfactory experience in completion of projects of comparable size and complexity. Evidence of this experience will be required before approval of the Engineer as being acceptable for their portion of the work.

1.3 SCHEDULE

- A. The schedule and sequence of work must be carefully coordinated with the Owner, to ensure that all work performed will result in a minimal amount of noise, dust, debris and disruption to the activities in the existing building, park and neighboring buildings.
- B. All interruptions of existing services must be coordinated with the Owner, to minimize inconvenience and disruption to the activities in the existing building and park. All interrupted services shall be restored as quickly as possible. All interrupted systems shall be thoroughly cleaned and tested prior to being placed back into operation.

1.4 SCOPE

- A. The work included under this specification consists of the furnishing of all labor, materials, tools, transportation, services, etc., which are applicable and necessary to complete the installation of the systems described in these specifications, illustrated on the accompanying drawings.
- B. In general, the various lines and raceways to be installed by the various trades under this specification shall be run as indicated, as specified herein, as required by particular conditions at the site, as required to conform to the generally accepted standards and as required by all governing Building Codes so as to complete the work in a neat and satisfactorily workable manner. Run work parallel or perpendicular to the lines of the paved areas unless otherwise noted.

1.5 INSPECTION OF SITE

- A. Visit the site, verify all existing items shown on plans, or specified, and be familiar with the working conditions, hazards, existing grades, actual formations, soil conditions, and local requirements involved; submission of bids shall be deemed evidence of such visit. All proposals shall take these existing conditions into consideration and the lack of specific information on the drawings shall not relieve the Contractor of any responsibility.

1.6 UTILITIES, LOCATIONS AND ELEVATIONS

- A. Locations and elevations of the various utilities included within the scope of this work have been obtained from city and/or other substantially reliable sources and are offered separately from the Contract Documents, as a general guide only, without guarantee as to accuracy. Examine the site, verify the locations, elevations, and availability of all utilities and services required, and be adequately informed as to their relation to the work; the submission of bids shall be deemed evidence thereof.

1.7 CODE REQUIREMENTS

- A. All work shall comply with the provisions of these specifications, as illustrated on the accompanying drawings, or as directed by the Engineer, and shall satisfy the National Electrical Code and all applicable local codes, ordinances, or regulations of the governing bodies, and all authorities having jurisdiction over the work, or services thereto. In all cases where alterations to, or deviations from, the drawings and specifications are required by the authority having jurisdiction, report the same in writing to the Engineer and secure his approval before proceeding. Upon completion of the work, furnish a statement from the inspecting authority stating that the installation has been accepted and approved. Provide complete utility service connections as directed, and submit, as required, all necessary drawings; secure all permits and inspections necessary in connection with the work, and pay all legal fees on account thereof. In the absence of other applicable local codes, acceptable to the Engineer, the National Electrical Code shall apply to this work.

1.8 MATERIALS AND WORKMANSHIP

- A. All materials unless otherwise specified shall be new, free from any defects, and of the best quality of their respective kinds. All like materials used shall be of the same manufacture, model, and quality unless otherwise specified.
- B. All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, adjusted, and conditioned as recommended by the manufacturers, or as indicated in their published literature unless specifically herein specified to the contrary.
- C. All work shall be performed by competent workmen and executed in a neat and workmanlike manner providing a thorough and complete installation. Work shall be properly protected during construction, including the shielding of soft or fragile materials, and the temporary plugging of open conduits during construction. At completion, the installation shall be thoroughly cleaned and all tools, equipment, obstructions, or debris present as a result of this portion of work shall be removed from the premises.

1.9 DRAWINGS AND SPECIFICATIONS

- A. The drawings show diagrammatically the locations of the various conduits, fixtures, and equipment, and the method of connecting and controlling them. It is not intended to show every connection in detail and all fittings required for a complete system. The systems shall include, but are not limited to, the items shown on the drawings. Exact locations of these items shall be determined by reference to the general plans and measurements at the building and in cooperation with other trades and, in all cases, shall be subject to the approval of the Engineer. The Engineer reserves the right to make reasonable change in the location of this work without additional cost to the Owner.
- B. Should any changes be deemed necessary in items shown on the contract drawings, the shop drawings, descriptions, and the reason for the proposed changes shall be submitted to the Engineer for approval.
- C. Exceptions and inconsistencies in drawings and specifications shall be brought to the Engineer's attention before bids are submitted; otherwise, the Contractor shall be responsible for the cost of any and all changes and additions that may be necessary to accommodate his particular apparatus.
- D. Lay out all work maintaining all lines, grades, and dimensions according to these drawings with due consideration for other trades and verify all dimensions at the site prior to any fabrication or installation; should any conflict develop or installation be impractical, the Engineer shall be notified before any installation or fabrication and the existing conditions shall be investigated and proper changes effected without any additional cost.
- E. Titles of Sections and Paragraphs in these specifications are introduced merely for convenience and are not to be construed as a correct or complete segregation or tabulation of the various units of material and/or work.

1.10 ENGINEER'S APPROVAL

- A. In the statement under this contract where "approval" is required or requested, it is understood that such approval must be obtained from the Engineer in writing before proceeding with the proposal, and an adequate number of copies of any such proposal shall be submitted to the Engineer.
- B. The approval of the Engineer of any material, changes, drawings, etc., submitted will be considered as general only and to aid the Contractor in expediting his work. Such approval as may be given does not in any way relieve the Contractor from the necessity of furnishing all materials and performing all work as required by the Drawings and Specifications.

1.11 LOCAL RESTRICTIONS

- A. Become familiar with all rules and regulations of the City, County, and State, or any other authority having jurisdiction over this project; and if any work or materials shown on the drawings or specified do not comply with these rules and regulations as to size, type, capacity, and quality, make it known prior to the submission of a bid, which shall be deemed evidence of compliance; otherwise, be responsible for the corrections required to obtain approval of all work, or material.

1.12 RESPONSIBILITY

- A. This Contractor will be held responsible for the satisfactory and complete execution of all work specified or indicated. He shall produce complete finished operating systems and provide all incidental items required as part of this work, regardless of whether such item is particularly specified or indicated.

1.13 GUARANTEE

- A. The entire system shall be guaranteed to be complete and installed in accordance with these plans and specifications.
- B. Guarantee all new materials and workmanship for a period of one year from and after date of Substantial Completion. Replace, during the period of the guarantee, any parts found to be defective in their operation, without cost to the Owner.

1.14 REFERENCE ABBREVIATIONS

- A. References are made in the various electrical sections to technical societies, codes, specifications, trade organizations, and regulatory authorities in accordance with the following abbreviations:
 - 1. FM - Factory Mutual
 - 2. FS - Federal Specification
 - 3. IEEE - Institute of Electrical and Electronics Engineers.
 - 4. IPCEA - Insulated Power Cable Engineers Association
 - 5. IRI - Industrial Risk Insurers
 - 6. ISO - Insurance Services Organization
 - 7. NEC - National Electrical Code(NFPA Pamphlet No. 70)
 - 8. NEMA - National Electrical Manufacturer's Association
 - 9. NFC - National Fire Codes
 - 10. NFPA - National Fire Protection Association
 - 11. UL - Underwriters' Laboratories, Inc.

1.15 SHOP DRAWINGS AND DATA TO BE SUBMITTED

- A. SUBMITTALS WHICH DO NOT MEET THE FOLLOWING REQUIREMENTS WILL BE IMMEDIATELY REJECTED WITHOUT FURTHER REVIEW.
 - 1. Catalog cutsheets and brochures will be preceded by a neatly arranged cover sheet having ample room for shopdrawing stamps and bearing the following information in a prominent, immediately visible location and size:
 - a. Equipment name or number as referenced in the contract Documents (example: "Type A" light fixture).
 - b. All options or accessories provided.
 - c. Applicable Specification section and paragraph numbers.
 - 2. Substitutions:

- a. Cross reference individual manufacturer and catalog numbers of substitute products to those of specified material.
 - b. Provide with requests for substitution, drawings, specifications, samples, performance data and other information as may be required to assist in determination of acceptability of the product. The burden of proof is the Contractor's responsibility.
 3. All similar or related items shall be submitted together under one cover sheet (i.e. fixtures, raceways, wiring, equipment). Do not piece-meal submittals.
- B. Submittal Items:
1. Submit manufacturer's certified data relative to equipment required for the installation of the electrical and electronic systems.
 2. Submit adequate engineering data on each piece of equipment to allow a careful check of compliance with the technical requirements of the Contract Documents. Clearly indicate on submittal data the manufacturer's name, piece number, equipment capacity, and other applicable technical data.
 3. Equipment, Electrical Systems Submittals:
 - a. Power Distribution Equipment.
 - b. Wiring Devices and Cover Plates.
 - c. Lighting Equipment.

1.16 OPERATING AND MAINTENANCE MANUALS

- A. Bind in looseleaf binders with the words, "Operating and Maintenance Manual" and the Project identification imprinted on the cover. Prepare three complete sets of records for the Owner, with table of contents, index, and tabbed Section dividers.
- B. During the construction period, accumulate the following for inclusion in the Operating and Maintenance Manuals:
 1. Copies or warranties and guarantees on each piece of equipment installed.
 2. Fixture brochures.
 3. Wiring and Control Diagrams.
 4. Approved Shop Drawings.
 5. Operating instructions.
 6. Recommended maintenance procedures.
 7. Lists of major items of equipment with name, address, and telephone number of each local representative.
- C. Submit the manuals for approval at approximately 75 percent job completion.
- D. Each manual shall consist of:
 1. Complete description of each item of equipment and apparatus furnished and installed -including ratings, capacities, and characteristics.
 2. Fully detailed parts list, including all numbered parts of each item of equipment and apparatus furnished and installed.
 3. Manufacturer's printed instructions describing operation, servicing, maintenance and repair of each item of equipment and apparatus.
 4. Typewritten record of all tests made of materials, equipment, and systems. All such records shall state the date tests were conducted, the names of all persons making and witnessing the tests, and citing any unusual conditions relevant to the tests.

1.17 RECORD DRAWINGS

- A. Accumulate Record Drawings during the construction of the Project. Keep one set of blue-line Contract Drawings at the job site at all times, and mark changes, rerouting or modifications which occur, clearly on the Drawings with dimensions.
- B. At completion of the job, deliver Record Drawings to Engineer. Record Drawings shall be submitted for approval prior to final payment.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Manufacturer's names and catalog numbers are scheduled or specified for the purpose of establishing standard of design, quality, appearance, performance and serviceability, and not to limit competition. Scheduled products (as may be modified by detailed specifications) are those selected as the basis for system design with respect to physical size and space arrangements, required capacity and performance characteristics, and the product quality intended.
- B. The Drawings indicate specified products physically arranged in the spaces, as cataloged by specific manufacturers, generally as listed in the Equipment Schedules.
- C. Listed "Acceptable Manufacturer's" are those considered capable of manufacturing products conforming to detailed Specifications, and as such, are invited to compete on an equal basis provided the offering is comparable in every respect to scheduled or specified products and actually conforms to the detailed Specifications and Schedule requirements. Listing herein as "acceptable manufacturers" does not imply "accepted", "approved", or "prior approval", or any other such connotation.
- D. Manufacturers of materials and equipment shall be as specified, scheduled, or as listed in each respective product Specification Article.
- E. At a bidder's request, an unnamed manufacturer's equipment will be considered to determine additional "acceptable manufacturers" if a request is made in writing no later than ten days prior to the bid opening. If such requests are found acceptable, an addendum will be written listing additional acceptable manufacturers. Consideration will be given only to requests of bona fide bidders (Contractors), not to those received from vendors.
- F. Manufacturers of materials and equipment shall be as specified, scheduled, or as listed in each respective product Specification Article.

2.2 WATERPROOFING

- A. Seal penetrations of wet or potentially wet structures, floors, exterior walls, etc., other than those requiring fire stopping, with sealant to prevent moisture leakage. Apply sealing material (calking) in accordance with manufacturer's published instructions.
- B. Product Research and Chemical Co. "Poly-Sulphide Sealant" PRC- 5000.

2.3 GROUNDING

- A. Provide grounding of electrical system in accordance with the National Electrical Code NFPA 70, UL 467, and IEEE 837 for grounding and bonding materials and equipment.
 - 1. Equipment grounding conductors shall be sized in accordance with the National Electrical Code Equipment Grounding Conductor Table on the basis of the circuit overcurrent protection device rating.
 - 2. Bond together the following items to serve as a single grounding electrode for all electric services:
 - a. Minimum 20 feet BHD copper conductor encased in concrete footing or grade beam in contact with earth.
 - b. 10'-0" X 3/4" diameter copper-clad steel ground rod(s).
 - 1) Where more than one ground rod is required to meet specified resistance, ground rods shall be located at least 10 feet apart. Interconnect with grounding electrode conductor below grade unless otherwise indicated.
 - c. Metal underground water pipe.
 - 3. Do not bond to building steel above grade.
 - 4. The grounding electrode shall be connected by a grounding electrode conductor sized in accordance with the National Electric Code Table 250-94 to the service neutral bus.
 - 5. Provide a main bonding jumper from the grounded service neutral bus to the main equipment ground bus or point of termination of the equipment grounding conductors.
 - 6. Provide bonding jumpers for attachment of each metallic water, fuel, fire suppression, steam, gas or air piping system to the building grounding electrode system. Provide connections with listed connectors applied to the piping in an approved method. The points of attachment of the bonding jumpers shall be accessible. The bonding jumper size shall match the main grounding electrode conductor.

7. Grounding system resistance must not exceed 5 ohms. Final tests shall be conducted to ensure that this requirement is met.
- B. Provide equipment grounding conductors for all circuits. A green insulated, copper ground conductor shall be installed with all circuits so as to make an electrically continuous ground system.
- C. Ground all non-current carrying equipment, such as cable tray and equipment structures.
- D. Grounding Connectors:
 1. Listed and labeled by a NRTL acceptable to the authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
 2. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.
 3. Welded Connections:
 - a. Exothermic welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.
 - b. For structural steel, steel grounding stud for compression connector.
 4. Compression Connectors: Hydraulic crimped, irreversible compression type kits. Connectors shall be factory filled with oxide inhibitor. All crimps shall be made with a hydraulic tool that embosses the index number on the outside of the connector. Compression type connections shall be allowed above and below grade where any permanent connection is required.
 5. All splices and grounding electrode connections shall be made with exothermic welds or with hydraulic compression fittings.
- E. Field Quality Control
 1. Inspect grounding and bonding system conductors and connections for tightness and proper installation. Inspect compression type connections for proper die index number embossment.
 2. Perform the following testing:
 - a. After installing grounding system, but before permanent electrical circuits have been energized, test for compliance with requirements.
 - b. Test completed grounding system as each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells, and at ground rods. Make tests at ground rods before any conductors are connected.
 - c. Measure ground resistance no fewer than two full days after the last trace of participation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
 - d. Perform tests for fall-of-potential method according to IEEE 81. Submit test results to the Engineer.
 - e. If resistance to ground exceeds specified values, promptly notify Engineer and include recommendations for reducing ground resistance.

2.4 IDENTIFICATION

- A. All cabinets for all panelboards, switchboards, disconnect switches, transformers, motor control centers, motor starters, and electrical equipment furnished (regardless of supplier) shall be provided with engraved phenolic lamacoid plastic name plates of 1/8-inch minimum thickness, with 1/2 inch block engraving. Name plates shall be attached to front of equipment with rivets or screws.
 1. Name plates shall give equipment designation as scheduled on the drawings, voltage and phase of service, the source of power, conduit and wire size. Example:
 - a) PANEL 2LW
 - b) 208/120Y, 3 ϕ , 4 W
 - c) FED FROM MDP-3
 - d) 2" C, 4-#3/0, #6G
 2. Provide labels for fused and non-fused switches and enclosed molded case breakers indicating equipment served, the unit capacity in horse power or full load amperes, voltage and phase of service, the installed fuse rating (where applicable) the source of power, conduit and wire size.. Example:
 - a) PUMP P-5
 - b) 10 HP
 - c) 480V, 3 ϕ
 - d) 20A FUSES

- e) FED FROM MDP-2
- f) ¾"C, 3#12, #12G
- B. After balancing branch circuits, provide each breaker panel with a clear plastic covered, neatly typed circuit directory in cardholder inside panelboard door, which identifies specifically the branch circuit loads and location, using room numbers corresponding to those finally established at the project. Coordinate room numbers with Owner before preparing directory. This requirement applies to all new panelboards and to existing panelboards that are affected in this project.
- C. Provide neatly handwritten circuit identification on every junction box cover plate, indicating the circuits within the box.
- D. Underground Warning Tapes for Buried Lines Outside of Building-
 1. Provide 3-inch wide metallic core brightly colored polyethylene detection tape, shallow buried in the trench above nonmetallic conduits, serving the dual purpose of line location and identification. The tape shall be easily detected by any commonly used metal detector and shall bear a printed message (continuous along entire length) describing the contents of the line beneath.
 2. Provide 6-inch wide brightly colored polyethylene tape, shallow buried in the trench above metallic conduits, to identify the contents of the line beneath. The tape shall bear a printed message (continuous along entire length) describing the type of the buried line and its contents.

2.5 WIRE AND CABLE

- A. Provide systems of wires and cables for electric power, signalling, and control.
- B. Materials:
 1. Conductors shall be soft drawn annealed, conductivity of 98% pure copper. No. 10 AWG and Smaller: Solid copper. No. 8 AWG and Larger: Stranded copper.
 2. Other: Pull Cords - 1/8" nylon. Pulling Compound - Ideal "Yellow 77".
- C. Install Wire Types:
 1. THWN, XHHW for light and power branch circuits and control wiring.
 2. THWN, XHHW for feeders, sub-feeders, motor circuits and high ambient temperature locations.
- D. Consistently color code wiring continuous throughout the work with insulation factory color-coded by pigmentation.
 1. 120/208 Volt Systems:
 - a. Phase A - Black
 - b. Phase B - Red
 - c. Phase C - Blue
 - d. Neutral - White
 - e. Ground - Green
 2. 277/480 Volt Systems:
 - a. Phase A - Brown
 - b. Phase B - Orange
 - c. Phase C - Yellow
 - d. Neutral - Gray
 - e. Ground - Green
 3. Switch legs, travelers, and special systems continuous throughout the work as selected by the Contractor.
 4. Where factory colors are not available, code ends of conductors with 1-1/2 inch colored tape.
- E. Circuits of multiple phases passing through enclosures shall have phases grouped to reduce the reactance effect.
- F. Minimum Sizes:
 1. Light and Power Branch Circuits, 15 and 20 amperes OCP:
 - a. Minimum branch circuit: No. 12 AWG
 - b. 120V longer than 80 feet first outlet to panel: No. 10 AWG.
 - c. 120V longer than 120 feet from first outlet to panel: No. 8 AWG
 - d. 277V longer than 130 feet from first outlet to panel: No. 10 AWG.
 - e. 277V longer than 220 feet from first outlet to panel: No. 8 AWG.

2. All branch circuits shall have dedicated full ampacity neutrals, or shared neutral conductors serving two or three branch circuits shall be sized at 175% of the maximum branch circuit overcurrent device, based on the 75°C ratings in Table 310-16 of the National Electrical Code. Shared neutral conductors shall be considered as current-carrying conductors for the purpose of derating conductor ampacities for installation of more than three current-carrying conductors in a raceway or cable.
 3. Other circuits sized to limit voltage drop per National Electrical Code.
 4. Control Wiring: No. 14 AWG, unless otherwise specified.
- G. Acceptable Manufacturers - American Insulated Wire Corp., Cablec Corp., Cerrowire, Essex, Guardian, Rome Cable, Triangle.

2.6 CONDUITS

- A. Provide a mechanically and electrically complete conduit system.
- B. Rigid Metal Electrical Conduit: Hot-dipped galvanized steel with zinc coated threads and an outer coating of zinc bichromate, complete with one coupling and one end thread protector.
- C. Rigid Nonmetallic Electrical Conduit: Schedule 40 heavy wall polyvinylchloride, high impact resistant.
- D. Elbows and Bends:
 1. For rigid nonmetallic conduit systems, use rigid metal electrical conduits.
 2. For nonmetallic conduit systems, use rigid metal electrical conduits.
 3. Size 1-1/4 inch and larger shall be factory manufactured.
- E. Bushings:
 1. 1-1/4" and Smaller: Same material as the conduit with which they are installed.
 2. 1-1/2" and Larger: Hot-dipped galvanized with thermosetting phenolic insulation, 150 Deg.C., O-Z/Gedney Type "B".
- F. Locknuts:
 1. 1-1/2" and Smaller: Zinc plated heavy stock steel, O-Z/Gedney.
 2. 2" and Larger: Cadmium plated malleable iron, O-Z/Gedney.
- G. Hubs: Cadmium plated malleable iron, tapered threads, neoprene "O" ring, insulated throat, O-Z/Gedney.
- H. Size conduits as indicated on the drawings and as required by the NEC for the number and sizes of wires to be drawn into conduit. Do not use conduit sized less than 3/4" unless specified otherwise.
- I. Installation:
 1. Install all conduits at elevations and locations to avoid interference with grading of other work.
 2. Cap or plug conduits with standard manufactured accessories as soon as the conduits have been permanently installed in place.
 3. Make all conduit joints mechanically tight, electrically continuous, and watertight. Pitch conduits in a manner to avoid creating moisture traps.
 4. Install rigid non-metallic conduit with manufactured spacers for feeders and branch circuits run underground, Use rigid metal conduit long radius sweeps for offsets and changes in direction. Use rigid metal conduit for risers and where exposed above slab or grade.

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.
 1. Before beginning work, investigate and verify the existence of underground utilities, mechanical systems, plumbing systems, electrical systems and other construction affecting the work.
 2. Coordinate the installation and routing of new circuitry with existing utilities and construction.

3.2 PROTECTION OF EQUIPMENT

- A. Protect equipment from physical damage and deterioration after it is delivered to the Project, and during the installation period prior to Owner acceptance.
- B. Repair scratches, mars, or paint deterioration.

3.3 EQUIPMENT SPACE

- A. The Drawings indicate specified products physically arranged in the spaces, as cataloged by specific manufacturers, generally as listed in the Equipment Schedule.
- B. Coordinate the exact physical space requirements for equipment and servicing of equipment actually purchased for each item of equipment involved.
- C. Adhere to Drawings as closely as possible in layout of work.
- D. Vary run of conduits and make offset during progress of work as required to meet structural and other interferences.

3.4 INTERFERENCES

- A. Relocate or reroute existing conduit, wiring, or equipment as required to facilitate construction of finished work as planned. Restore surfaces, insulation, and finish to match condition of adjacent work.

3.5 CUTTING AND PATCHING

- A. Assume costs and responsibility for cutting and patching required to complete the installation.

3.6 PAINTING AND FINISHING AND CLEANING

- A. Provide touchup painting of prefinished electrical products.
- B. Surfaces shall be left clean and debris shall be removed.
- C. Clean all light fixture lenses, lamps and reflectors.

3.7 TESTS AND LOAD BALANCING

- A. Test all circuits to assure them to be free of grounds. Prove and test energy available at the load side of disconnect switches and the final point of connection to driven equipment. Make all reasonable tests as required by the Engineer to provide the integrity of the work and leave the complete electrical installation in first class condition and ready for operation.
- B. Balance the load on each phase when connecting the various branch circuits in each panel board. When all load is turned on and the system is in operation at 100% demand, the initial unbalance shall not exceed 10%.
- C. Furnish at the completion of the job, a final inspection certificate from the local inspecting authority.

3.8 EXCAVATION AND BACKFILLING

- A. Provide necessary excavating and backfilling for the installation of work specified in this Division. Trenches for underground conduits shall be excavated to required depths as necessary to insure uniform bearing. Care should be taken not to excavate below depth, and any excavation below depth shall be refilled with sand or gravel firmly compacted. Where rock or hard objects are encountered, they shall be excavated to a grade six inches (6") below the lowermost part of the raceway and refilled to the raceway grade as specified. After the raceway has been installed, tested, and approved, the trenches shall be backfilled to grade with approved material, in 12 inch layers wetted and compacted to density of adjacent soil. Complete backfill to grade to result in a well compacted trench to 95% compaction by the standard Proctor test. Where streets, sidewalks, etc., are disturbed, cut, or damaged by this work, the expense of repairing same in a manner approved by the Engineer shall be a part of this work.

1. Contractor to employ a qualified testing laboratory to perform compaction density testing, the appropriate ASTM for testing and frequency of tests, and submit test reports.

3.9 ELECTRICAL DISCONNECTS

- A. Provide disconnects where indicated and where required by the National Electrical Code. Install within sight of electrified equipment served and provide final connection to equipment served.
- B. Provide switch sizes as required by the National Electrical Code based on the equipment actually furnished under other Divisions or provided by the Owner.
- C. Provide NEMA 3R enclosures.

3.10 CONCRETE

- A. Concrete to be in accordance with ACI 301. Minimum 4,000 psi, air-entrained concrete. Contractor to submit laboratory prepared design mixes. Contractor to employ qualified testing lab to perform site sampling and testing per ASCI 301.

END OF SECTION 26 0100

SECTION 26 5100 – SITE LIGHTING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Conditions of the Contract and General Requirements are hereby made a part of this section.
- B. Provide lighting fixtures, lamps, and accessories for exterior site illumination.

1.2 QUALITY ASSURANCE

- A. **Manufacturers:** Exceptions to manufacturers listed with each item shall be made in accordance with the General Requirements.
- B. **Laboratory Testing:** Photometric testing shall be by Independent Testing Laboratories, Inc., based on Illuminating Engineering Society published procedures, and shall include candlepower distribution tabulation and zonal cavity coefficient of utilization tabulation.
- C. Pole Lighting performance shall meet the criteria established for the design of this project. The supplier shall provide calculated performance information in this work. The manufacturer shall supply photometric data for the supplied fixture in a standard IES format so that the calculations for this project may be independently verified.
- D. **Standards:**
 - 1. All lighting fixtures shall meet Underwriters' Laboratories, Inc., applicable standards.
 - 2. Fixtures shall be provided possessing Underwriters' Laboratories location duty listings as required by the specific application.
 - a. Exposed Outdoors - Wet Location
 - b. Sheltered Outdoors - Damp location
- E. **NEC Compliance:** Comply with the NEC as applicable to the installation and construction of lighting fixtures.
- F. **NEMA Compliance:** Comply with applicable requirements of NEMA Standard Pub. Nos. LE-1 and LE-2 pertaining to lighting equipment.
- G. **ANSI/UL Compliance:** Comply with ANSI/UL Standards pertaining to exterior lighting fixtures.
- H. **UL Compliance:** Provide light fixtures that have been UL listed and labeled.

1.3 SUBMITTALS

- A. Submit manufacturer's literature giving materials, finishes, dimensions, coefficients of utilization, and light source types for each fixture which is the product of one of the listed acceptable manufacturers. Include complete shop drawings of the fixture.
- B. Submit samples of fixtures upon specific request.
- C. See Section 26 0100.
- D. Submit shop drawings for each ground and pole mounted site lighting assembly to include fixture and driver arrangement, maximum EPA per pole, total electrical loads and pole construction details, pole fixture lighting layout showing recommended pole locations, fixture types, aiming points and mounting heights.
 - 1. Submit IES format photometric data on standard digital data media for the submitted fixtures.
- E. Manufacturer shall submit for approval a computer calculation derived lighting layout showing point by point footcandle levels of the parking and sidewalk surfaces, maximum to minimum ratio and total energy consumption in KW per hour required for proposed layout. Point by point lighting level calculations shall identify maintained horizontal footcandle levels for comparison to the design.
 - 1. For LED fixtures, calculations to determine the maintained lighting levels shall be based on the following:
 - a. A 0.9 light loss factor.
 - b. Absolute fixture lumens.
 - c. Minimum illuminance for the paved parking and sidewalk areas of 1.0 footcandle.
 - 2. Submit IES format photometric data on standard digital data media for the submitted fixtures.

1.4 CERTIFICATES

- A. Labels of Underwriters' Laboratories, Inc.; Certified Ballasts Manufacturers, and Electrical Testing Laboratories affixed to each item of material.

1.5 WARRANTY

- A. Luminaires shall be provided with a 5 year warranty covering LEDs, drivers, 10kV surge module, paint finish and electrical connectivity.

PART 2 - PRODUCTS

2.1 ACCEPTABLE FIXTURE MANUFACTURERS

- A. Listed in schedule and with materials.

2.2 POLE LIGHTING FIXTURES

- A. Luminaire Assembly/Hardware -

1. Luminaires shall be fully assembled and individually tested prior to shipment.
2. Luminaire housing and door shall be one piece die cast aluminum construction. The housing shall be designed to prevent the buildup of water and debris on the top of the housing. Access to the internal housing and electrical components shall be toolless by use of two recessed stainless steel latches. Door frame shall swing down and be retained by two catch hinges. Drivers and surge module shall be separated from the optical chamber by a cast in wall to allow for cooler operation. Luminaire shall include an extruded aluminum bolt on arm bracket for mounting to round or square poles.
3. The maximum weight of the luminaire shall be 66 pounds and the maximum effective projected area shall not exceed 4 with mounting bracket.
4. Manufacturers of LED luminaires shall demonstrate a suitable testing program incorporating high heat, high humidity and thermal shock test regimes to ensure system reliability and to substantiate lifetime claims.
5. The sole use of IESNA LM-80 data to predict luminaire lifetime is not acceptable.
6. At time of manufacture, electrical and light technical properties shall be recorded for each luminaire. At a minimum, this should include lumen output, CCT, and CRI. Each luminaire shall utilize a unique serial numbering scheme. Technical properties must be made available for a minimum of 5 years after the date of manufacture.
7. Each luminaire shall consist of an assembly that utilizes LEDs as the light source. In addition, a complete luminaire shall consist of a housing, LED array, and electronic driver.
8. Each luminaire shall be rated for a minimum operational life of 50,000 hours at an average operating time of 11.5 hours per night at 40°C (104°F).
9. The rated luminaire operating temperature range shall be -30°C (-22°F) to +40°C (104°F). Each luminaire shall be capable of operating above 104° F (40°C), but not expected to comply with photometric requirements at elevated temperatures.
10. Each luminaire shall be listed with Underwriters Laboratory, Inc. under UL1598 for luminaires, or approved equivalent standard from a nationally recognized testing laboratory.
11. Luminaire housing shall be UL wet location listed.
12. The optical assembly of the luminaire shall be protected against dust and moisture intrusion per the requirements of IP-66 (minimum) to protect the optical components.
13. Housing and door frame shall be die cast aluminum with a nominal 2.5 mil thick paint finish able to withstand a 3,000 hour salt spray test as specified in ASTM Designation B117.
14. Each refractor or lens shall be made from UV inhibited high impact optical grade acrylic and be resistant to scratching.
15. Luminaire shall have a minimum initial efficacy of 84 lumens per watt and shall consume no more than 300 watts. The luminaire shall not consume power in the off state.

- B. LEDs and Drivers:

1. As specified below.

- C. Aluminum or steel lighting poles, as scheduled (base mounted):
1. All poles with concrete base shall be designed to withstand the bending and overturning moment created by the wind loading of the entire pole and mounted assemblies (EPA) and eccentricity caused by deflections under design wind loads. The design wind loading shall meet IBC-2012 Risk Category IV design criteria. All portions of concrete pole bases shall be constructed in accordance with other specification sections.
 2. Poles shall be fabricated from aluminum or steel, as scheduled, and shall have an electrical cable passageway through the center. Poles shall receive a baked, electrostatically applied powder paint finish with a primer coat and a finish coat.
 3. Poles shall be provided with base access hole with cover above the pole base.
 4. Lightning protection shall be provided for each pole. A dual rated grounding lug shall be provided at the pole bottom hand hole. This grounding lug shall be electrically and mechanically connected to the pole metal.
 5. Pole accessories:
 - a. A handhole frame shall be centered above the pole base. Cover in round poles shall be curved.
 - b. A UL grounding lug shall be bonded to the inside of the pole across from the pole base handhole.
 - c. Factory installed vibration dampener.
 6. Grounding: A #6 stranded copper ground wire shall be attached to an internal lug and connect a 5/8" x 10' UL listed ground rod unless diagrammed or scheduled otherwise.
 7. Pole Handling and Erection:
 - a. Transportation, site handling and erection shall be performed by qualified personnel with equipment and methods that are in accordance with standard industry practices.
 - b. Prior to unloading the pole, shop drawings shall be reviewed to identify proper pick-up points for unloading, storage and erection procedures.
 - c. Internal wiring may be installed while pole is in horizontal position on the ground.
- D. Acceptable Manufacturers:
1. Eaton-Lumark, Hubbell, Lithonia Architectural, Streetworks.

2.3 LEDs AND DRIVERS

- A. LEDs and Thermal Management:
1. Luminaire shall be manufactured with LED's provided by Philips Lumileds, Cree, Nichia or Citizen. LEDs shall have a Correlated Color Temperature (CCT) of 4,000K +/-275K. The color rendition index (CRI) shall be a nominal 70. Binning of the LEDs shall conform to ANSI/G, NEMA SSL 3-2010. Drive current to the LEDs shall not exceed 350mA.
 2. The individual LEDs shall be constructed such that a catastrophic loss or the failure of one LED will not result in the loss of the entire luminaire.
 3. The luminaire shall be constructed such that LED modules may be replaced or repaired without replacement of the whole luminaire.
 4. The thermal management (of the heat generated by the LEDs) shall be of sufficient capacity to assure proper operation of the luminaire over the expected useful life.
 5. The LED manufacturer's maximum thermal pad temperature for the expected life shall not be exceeded.
 6. Thermal management shall be passive by design. The use of fans or other mechanical devices shall not be allowed.
 7. The luminaire shall have a minimum heat sink surface such that the LED manufacturer's maximum junction temperature is not exceeded at the maximum rated operating temperature.
 8. The heat sink material shall be aluminum.
- B. Drivers:
1. LED Drivers and Surge Supression :
 - a. The driver shall operate from 60 HZ+/-3HZ AC line over a voltage ranging from 108 VAC to 305 VAC. The fluctuations of line voltage shall have no visible effect on the luminous output.

Power factor shall be .90 or greater. Total harmonic distortion (current and voltage) induced into the AC power line shall not exceed 20 percent. Drivers must meet Class A emission limits referred in Federal Communications Commission Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise. Drivers shall be an IP66 rated UL class 2 power unit as per UL 1310.

- b. Surge Suppression: The luminaire on-board circuitry shall include surge protection devices (SPD) to withstand high repetition noise transients as a result of utility line switching, nearby lightning strikes, and other interference. The SPD shall protect the luminaire from damage and failure for common and differential mode transient peak currents up to 10 kA (minimum). SPD conforms to UL 1449. SPD performance has been tested per procedures in ANSI/IEEE C62.41-2:2002 category C high exposure and ANSI C136.2 10kV BIL. The SPD shall fail in such a way as the Luminaire will no longer operate. The SPD shall be field replaceable.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Inspect drawings and specifications.
- B. Inspect site and existing construction for defects affecting the quality and execution of work.

3.2 PREPARATION

- A. Layout exact locations of poles and fixtures in accordance with plans, fixture details and supports. Obtain approval from Architect for layout locations.

3.3 LIGHTING POLE INSTALLATION

- A. Excavation:
 - 1. The Contractor may excavate by any means he prefers, insofar as these methods conform to these specifications.
 - 2. The bottom of the pole base holes shall be on undisturbed earth. If a pole hole is excavated to a depth greater than required, it shall be backfilled with graded crushed rock, placed in 6" layers, and thoroughly machine tamped to density of surrounding soil.
 - 3. The Contractor shall immediately notify the Architect of any abnormal conditions discovered during excavation that may affect the installation.
- B. Plumb poles to vertical.
- C. Provide lighting fixtures, switches, and control systems, and wiring.
- D. Install in accordance with manufacturer's instructions, submittal data, and details on the drawings.

3.4 ADJUSTMENT AND CLEANING

- A. Adjustment: Adjust internal reflectors and/or lamp positions for desired effects. Align fixtures with layout or building walls.
- B. Cleaning: Remove dirt, grease, and foreign materials from interior and exposed of all fixtures.
- C. Touchup marred finishes with manufacturer supplied paint or coating material to the satisfaction of the Architect. Poles with excessive damage to finish shall be replaced.
- D. The Contractor shall be responsible and bear all costs for remedy of deficient performance or installation.

3.5 LIGHTING FIXTURE SCHEDULE

- A. Refer to drawings for fixture schedule.

END OF SECTION 26 5100

SECTION 31 2000 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Preparing subgrades for slabs-on-grade, walks, pavements, lawns, and plantings.
 2. Subbase/Drainage course for slabs-on-grade.
 3. Subsurface drainage backfill for walls and trenches.

1.2 DEFINITIONS

- A. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- B. Structures: Man made stationary features constructed above or below the ground surface.
- C. Subbase/Drainage Course: Aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete walk.
- D. Subgrade: Uppermost surface of an excavation immediately below subbase materials.
- E. Utilities: On site underground pipes, conduits, ducts, and cables.

1.3 SUBMITTALS

- A. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

1.4 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify "One Call" for area where Project is located before beginning earth moving operations.
- C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures in accordance with Riley County and City of Manhattan Standard Specifications are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

- B. Satisfactory Soils: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM, or a combination of these group symbols; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT, or a combination of these group symbols.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase/Drainage Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2- inch sieve and not more than 12 percent passing a No. 200 sieve; or approved equivalent locally available material.
- E. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve; or approved equivalent locally available material.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations in accordance with Riley County and City of Manhattan Standard Specifications.
- C. Protect subgrades from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include soil materials and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for removal of obstructions.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 SUBGRADE INSPECTION

- A. Notify Architect when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory material is present, continue excavation and replace with compacted subbase material as directed.
- C. Proof roll subgrade below pavements with a pneumatic tired and loaded 10 wheel, tandem axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof roll wet or saturated subgrades.
 - 1. Completely proof roll subgrade in one direction, repeating proof rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
 - 2. Excavate soft spots, unsatisfactory materials, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted subbase material as directed.

- D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.6 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavations as directed by the Architect.

3.7 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 1. Surveying locations of underground utilities for record documents.
 2. Inspecting and testing underground utilities.
 3. Removing concrete formwork.
 4. Removing trash and debris.
 5. Removing temporary shoring and bracing, and sheeting.

3.8 UTILITY TRENCH BACKFILL

- A. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bodies of conduits.
- B. Backfill trenches excavated under footings and within 18 inches of bottom of footings; fill with concrete to elevation of bottom of footings.
- C. Place and compact initial backfill of subbase material, free of particles larger than 1 inch, to a height of 12 inches over the utility pipe or conduit.
 1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- D. Coordinate backfilling with utilities testing.
- E. Fill voids with approved backfill materials while shoring and bracing, and as sheeting is removed.
- F. Place and compact final backfill of satisfactory soil material to final subgrade.
- G. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.9 FILL

- A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.
- B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- C. Place and compact fill material in layers to required elevations as follows:
 1. Under grass and planted areas, use satisfactory soil material.
 2. Under walks and pavements, use satisfactory soil material.
 3. Temporary aggregate surfaced parking, use aggregate surfacing.

3.10 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
 1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 2. Remove and replace, or scarify and air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.11 COMPACTION OF BACKFILLS AND FILLS

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

-
- C. Compact soil to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
 - 1. Under structures and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill material at 95 percent.
 - 2. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill material at 85 percent.

3.12 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding.
 - 1. Lawn or Unpaved Areas: Plus or minus 1 inch.
 - 2. Walks: Plus or minus 1 inch.
 - 3. Pavements: Plus or minus 1/2 inch.

3.13 DRAINAGE COURSE

- A. Under slabs-on-grade, place drainage course on prepared subgrade and as follows:
 - 1. Compact drainage course to required cross sections and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.14 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor shall engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.
- B. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained and documented.

3.15 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION 31 2000

CONTRACT AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between **the people of Riley County, Kansas**, acting through their **County Commissioners**, thereunto duly authorized to do so, party of the first part and hereinafter called the Owner, and _____, party of the second part and hereinafter called the Contractor.

WITNESSETH:

THAT WHEREAS, the Owner has caused to be prepared in accordance with the law, specifications, plans, and other contract documents for the work herein described and has approved and adopted said documents and has caused to be published in the manner and for the time required by law, an advertisement for and in connection with:

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in accordance with the drawings, specifications, and other contract documents prepared by The Ebert Mayo Design Group, 1115 Westport Dr. Manhattan, KS 66502

WHEREAS, the said Contractor in response to such advertisement has submitted to the Owner in the manner and at the time specified a sealed proposal in accordance with the terms of said advertisement; and

WHEREAS, the Owner in the manner prescribed by law has publicly opened, examined, and canvassed the proposals submitted in response to the published invitation therefore, and as result of such canvass has determined and declared the aforesaid Contractor to be the best bidder for the said work and has duly awarded to the said Contractor a contract therefore, for the sum or sums named in the Contractor's proposal, a copy thereof being attached to and made a part of this contract.

NOW, THEREFORE, in consideration of the compensation to be paid to the Contractor and of the mutual agreements herein contained, the parties to these presents have agreed and hereby agree, the Owner for itself and successors and the Contractor for itself, himself or themselves or its, his or their successors and assigns or its, his or their executors and administrators as follows:

ARTICLE I. The Contractor shall furnish all necessary labor, materials, equipment, tools, and services necessary to perform and complete in a workmanlike manner all work required for the construction of the project in strict compliance with the plans, specifications, and other contract documents herein mentioned which are hereby made a part of the contract.

ARTICLE II. The contract comprises the contract documents listed as follows. In the event that any provision of one contract document conflicts with the provision of another contract document, the provision in that contract document first listed below shall govern except as otherwise specifically stated:

- a. Agreement (this instrument), including Contractual Provisions attachment and Exhibits to the Agreement.
- b. Addenda to contract documents as follow:

Addendum No.

Dated

- c. Legal and procedural documents.
 - 1. Proposal
 - 2. Instructions to Bidders.
 - 3. Notice to Bidders.
- d. Detailed specification requirements.
 - 1. Special Provisions.
 - 2. Supplemental Specifications.
- e. Plan drawings and Special Conditions.
- f. General provisions of the specifications.
 - 1. Special Provisions.
- g. Bonds.
 - 1. Performance Bond.
 - 2. Statutory Bond.
 - 3. Bid Bond.
- h. Owner's "Contractual Provisions Attachment"

ARTICLE III. The Contractor shall start work on or within ten days following the date of a written order from the Owner to the Contractor to proceed with the work to be performed under the provisions of this contract or on a subsequent date designated and authorized by the Owner in said order and the Contractor shall complete said work within **calendar days** as stated in his proposal.

ARTICLE IV. The Contractor shall at all times observe and comply with all Federal and State laws, local bylaws, ordinances, and regulations in any manner affecting the conduct of the work and all such orders or decrees as exist at present and those which may be enacted late by bodies or tribunals having jurisdiction or authority over the work and shall indemnify and save harmless the Owner and all its officers, agents, representatives, and servants against any claim or liability from or based on the violation of any such law, bylaw, ordinance, regulation, order, or decree whether by himself, his employees, or his subcontractors.

The Contractor shall comply with all applicable laws governing safety, health, and sanitation and shall provide all safeguard, safety devices, and protective equipment and take any other needed actions on his own responsibility necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

ARTICLE V. For the performance of work under this contract, the Owner has designated Riley County Engineer as a duly authorized agent to perform the duties of the Engineer as the duly authorized representative of the Owner. The Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished and the work performed and as to the manner of performance and rate of progress of the work and shall decide all questions which may arise as to the interpretation of the plans and specifications and all questions as to the acceptable fulfillment of the terms of the contract.

ARTICLE VI. The Owner shall have the right to terminate the employment of the Contractor after giving ten days written notice of termination to the Contractor and his surety in the event of any default by the Contractor and upon receiving written notice from the Engineer certifying cause for such action. In the event of such termination, the Owner may take possession of the work and of all material, tools, and equipment thereon and may finish the work by whatever method and means he may select. The Owner may demand of the Contractor's surety that the surety proceed in place of the Contractor to complete the contract in accordance with the terms and provisions thereof. It shall be considered a default by the Contractor whenever he shall:

- a. Declare bankruptcy, become insolvent, or assign his assets for the benefit of his creditors.
- b. Disregard or violate important provisions of the contract documents or Engineer's instructions or fail to prosecute the work according to the agreed schedule of completion including extensions thereof.
- c. Fail to provide a qualified superintendent, competent workmen or subcontractors, or proper materials, or fail to make prompt payment therefore.

ARTICLE VII. The Contractor may suspend work or terminate the contract upon ten days written notice to the Owner and the Engineer for any of the following reasons:

- a. If an order of any court or other public authority caused the work to be stopped or suspended for a period of 90 days through no fault of the Contractor or his employees.
- b. If the Engineer should fail to act upon any request for payment within ten days after it is presented in accordance with the contract documents.
- c. If the Owner should fail to act upon any request for payment within 30 days after its approval by the Engineer.
- d. If the Owner should fail to pay the Contractor any sum within 30 days after its award by arbitrators.

ARTICLE VIII. The Owner shall pay to the Contractor for the performance of the work embraced in this contract and the Contractor will accept as compensation therefore, the unit bid prices stipulated in the Proposal attached hereto for the various items of work in accordance with the provisions of the

contract documents. The total contract price shall be determined on the basis of the actual quantities of work performed and materials furnished as authorized and determined in accordance with the provisions of the contract documents. The total bid price, determined on the basis of approximate quantities listed in the above mentioned Schedule of Bid Prices is in the amount of

ARTICLE IX. Ten percent (10%) shall be deducted from each partial payment and retained by Riley County until the provisions of the contract and bond have been satisfied. If the work is progressing satisfactorily in accordance with the plans, this retainage may be reduced as the contract nears completion. At no time shall the retainage exceed five (5%) of the total contract amount.

ARTICLE X. The Contractor agrees to bond every subcontractor by the terms of the contract documents but in no way shall this be considered as creating any contractual relation between any subcontractor and the Owner.

ARTICLE XI. The Contractor shall purchase and maintain insurance in the following minimum amounts or the minimum amounts required by law, whichever is greater throughout this Agreement:

- a. Workers' Compensation and employer's liability insurance as required by the State of Kansas.
- b. Comprehensive automobile and vehicle liability insurance covering claims for injuries to members of the public and/or damages to property of others arising from use of motor vehicles, including on site and off site operations, and owned, non-owned, or hired vehicles, with \$1,000,000 combined single limits.
- c. Commercial general liability insurance covering claims for injuries to members of the public or damage to property of others arising out of any covered negligent act or omission of the contractor or of any of its employees, agents, or subcontractors, with \$1,000,000 per occurrence and in the aggregate.
- d. Owner will be named as an additional insured with respect to Contractor's liabilities hereunder in insurance coverage identified in items "b" and "c", and Contractor waives subrogation against Owner as to said policies.
- e. Contractor shall file (3) copies of certificates of aforementioned insurances with Owner through Engineer.

ARTICLE XII. This Agreement and all of the covenants hereof shall insure to the benefit of and be binding upon the Owner and Contractor respectively and to his partners, successors, assigns, and legal representatives. Neither the Owner nor the Contractor shall have the right to assign, transfer, or sublet his interests or obligations hereunder without written consent of the other party.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

BOARD OF COUNTY COMMISSIONERS
RILEY COUNTY, KANSAS

CONTRACTOR

Ronald Wells, Chairman

By

Title

Address

ATTEST: County Clerk

* * * * *

The contract and bond are in due form according to law and are hereby approved.

County Counselor

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

that the Contractor _____ of
_____, as principal, and as surety _____
a corporation authorized under the laws of the State of _____
with general offices in _____
and authorized to transact business in the State of Kansas are held and firmly bound unto
Riley County, Kansas as Owner, in the penal sum of _____
_____ (**\$XXXX.XX**). lawful money of the United States, for the
payments of which sum well and truly to be made, said principal and surety bind themselves, their
heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

Signed, sealed and delivered this _____ day of _____, 20____.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT

WHEREAS, said principal has entered into a written Agreement with Riley County,
Kansas as Owner, dated _____ day of _____, 20____, for the furnishing
of all materials and labor and doing all the work of whatever kind necessary to construct the

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for the Owner, all in accordance with the Contract Documents for such work on file in the office
of the Owner and in accordance with said Agreement, which is by reference made a part hereof.

NOW THEREFORE, if said principal shall well and truly perform all of the covenants,
conditions and obligations of said Agreement on the part of said principal to be performed, and shall
hold the Owner harmless against all claims, loss of damage which it may sustain or suffer by reason of
any breach of said Agreement by said principal, and if said principal shall maintain the improvements
to be constructed by him as provided for in said Agreement and shall make good all defects in material
and workmanship in the manner and for a period of one year, or such other period as provided for in
the Contract Documents above referred to, then this obligation shall be void; otherwise to remain in
full force and effect.

The said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Agreement to the Work to be performed thereunder or the Specifications accompanying the same, shall in any way affect its obligations on this bond, and it does hereby waive notice of such change, extension of time, alteration or addition to the terms of the Agreement or to the Work or to the Specifications and further agrees that this bond and its obligation thereunder shall extend to all subsequent work ordered by modification pursuant to the provisions of the Contract Documents.

IN TESTIMONY WHEREOF, said principal has duly executed these presents and said surety has caused these presents to be executed in its name and its corporate seal to be hereunto affixed, by its duly authorized agent or agents, all as of the day and year first above written.

Contractor

Principal

Surety

Attorney-in-fact

This instrument shall be executed in three (3) copies, all considered as originals. Date of this instrument shall not be prior to date of agreement. A certified copy of each agent's power-of-attorney must be attached to each copy hereon

STATUTORY BOND

K N O W A L L M E N B Y T H E S E P R E S E N T S

that the Contractor _____, as principal, and as surety _____
_____ a corporation authorized under the laws of the State of
_____ with general offices in _____ and authorized to transact
business in the State of Kansas are held and firmly bound unto the State of Kansas in the penal sum of
_____ (\$XXX.XX) lawful money
of the United States, for the payment of which sum well and truly to be made, said principal and
surety bind themselves, their heirs, administrators, executors, successors, and assigns, jointly and
severally, firmly by these presents.

Signed, sealed, and delivered this _____ day of _____ 20____.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH THAT WHEREAS,
said principal has entered into a written Agreement with **Riley County, Kansas** as Owner,
dated _____ day of _____, 20____, for the furnishing of all materials and
labor
and doing all the work of whatever kind necessary to construct a

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for the Owner, all in accordance with the Contract Documents for such work on file in the office
of the Owner and in accordance with said Agreement, which is by reference made a part hereof.

NOW THEREFORE, if the said principal or the subcontractor or subcontractors of said
principal shall pay all indebtedness incurred for supplies, material, or labor furnished, used, or
consumed in connection with or in or about the Construction or making of the above described
improvement; including gasoline, lubricating oils, fuel oils, greases, coal, and similar items used or
consumed directly in furtherance of such improvement, this obligation shall be void; otherwise, it shall
remain in full force and effect.

The said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Agreement or to the Work to be performed thereunder or the Specifications accompanying the same, shall in any way affect its obligations on this bond, and it does hereby waive notice of such change, extension of time, alteration or addition to the terms of the Agreement or to the Work or to the Specifications and further agrees that this bond and its obligation thereunder shall extend to all subsequent work ordered by modification pursuant to the provisions of the Contract Documents.

IN TESTIMONY WHEREOF, said principal has duly executed these presents and said surety has caused these presents to be executed in its name and its corporate seal to be hereunto affixed, by its duly authorized agent or agents, all as of the day and year first above written.

Contractor

Principal

Surety

Attorney-in-fact

This instrument shall be executed in four (4) copies, all considered as originals. Date of this instrument shall not be prior to date of the agreement. A certified copy of each agent's power-of-attorney must be attached to each copy hereon. OWNER shall file one copy with the Clerk of the District Court, in the district that the work is performed.

Attachment to "Contract" Between Riley County (hereinafter "County"), and
_____ (hereinafter "Contractor").

CONTRACTUAL PROVISIONS ATTACHMENT

The undersigned parties agree that the following provisions are hereby incorporated into the contract to which it is attached and made a part thereof, said contract being dated _____.

1. **TERMS HEREIN CONTROLLING PROVISIONS.** It is expressly agreed that the terms of each and every provision in this attachment shall prevail and control over the terms of any other conflicting provision in the contract and any other document relating to and a part of the contract in which this attachment is incorporated. All terms hereof survive termination of the contract.
2. **AGREEMENT WITH KANSAS LAW.** It is agreed by and between the undersigned that all disputes and matters whatsoever arising under, in connection with or incident to the contract shall be litigated, if at all, in and before a state Court located in the State of Kansas, County of Riley, or if in Federal Court, at a Federal Court located in Topeka, Kansas, to the exclusion of the Courts of any other states or country. All contractual promises shall be subject to, governed by, and construed according to the laws of the State of Kansas, without reference to its conflict of laws principles. Both parties submit to venue and jurisdiction in these courts. In the event an action or claim arises outside of the exclusive jurisdiction specified herein which names County as a party, Contractor agrees to initiate, consent to and/or cooperate with any and all efforts to remove the matter to the exclusive jurisdiction named herein and otherwise to take any and all reasonable actions to achieve County's objectives of this provision.
3. **COMPLIANCE WITH APPLICABLE LAWS, SERVICE STANDARDS AND REQUIRED PROCEDURES.**
 - 3.1 **Service Standards and Procedures.** Contractor shall perform the services set forth in the Contract in compliance with applicable standards and procedures specified in the Contract.
 - 3.2 **Compliance With Law.** Contractor shall comply with all applicable local, state and federal laws and regulations, in carrying out the Contract, regardless of whether those legal requirements are specifically referenced in the Contract.
4. **CASH BASIS AND BUDGET LAWS.** The right of the County to enter into the Contract is subject to the provisions of the Cash Basis Law (K.S.A. 10-1112 and 10-1113), the Budget Law (K.S.A. 79-2935), and other laws of the State of Kansas. The Contract shall be construed and interpreted so as to ensure that the County shall at all times stay in conformity with such laws, and as a condition of the Contract the County reserves the right to unilaterally terminate the Contract at any time if, in the opinion of its legal counsel, the Contract may be deemed to violate the terms of such laws. Any Contract for a term of one year shall be interpreted by the parties to provide County the sole option to renew that Contract before the end of each one year term.
5. **TERMINATION DUE TO LACK OF FUNDING APPROPRIATION.** If, in the judgment of the Riley County Commissioners, after consultation with its Budget and Finance Officer or other county officials, sufficient funds are not appropriated to continue the function performed in the contract and for the payment of the charges hereunder, County may terminate the contract at the end of its current fiscal year. Termination shall be effective 30 days after County mails written

notice to Contractor. In the event of such termination, County agrees to give written notice of termination to contractor. With regard to equipment, leased or otherwise, provided to County under the contract, if lawful, County will pay to the contractor all regular contractual payments incurred through the end of such fiscal year, plus contractual charges incidental to the return of any such equipment. Upon termination of the contract by County, title to and possession of any equipment purchased by the County under contract, but not fully paid for, shall revert to Contractor at the end of County's current fiscal year. The termination of the contract pursuant to this paragraph shall not cause any penalty to be charged to the County or the Contractor.

6. **LEASE/PURCHASE AGREEMENTS, LEASES WITH AN OPTION TO BUY, AND INSTALLMENT PURCHASE AGREEMENTS.** If the Contract to which this is attached is a lease-purchase agreement, a lease with an option to buy or an installment purchase agreement, pursuant to K.S.A. 10-1116b, County is obligated only to pay periodic payments or monthly installments under the contract as may be lawfully made from (a) funds budgeted and appropriated for that purpose during the County's current budget year or (b) funds made available from any lawfully operated revenue producing source.

Pursuant to K.S.A. 10-1116c, if the foregoing Contract is for a term exceeding the current fiscal year of the County, the Contract must specify: (1) the amount or capital cost required to purchase the item if paid for by cash, (2) the annual average effective interest cost, and (3) the amount included in the payments for service, maintenance, insurance or other charges exclusive of the capital cost and interest cost.

7. **ANTI-DISCRIMINATION CLAUSE.** In carrying out the Contract, Contractor shall comply with K.S.A. 44-1001 *et seq.*

- 7.1 Contractor shall observe the provisions of the Kansas act against discrimination and the Kansas age discrimination in employment act, and shall not discriminate against any person in the performance of work under the Contract because of race, religion, color, sex, disability, national origin, ancestry, or age.
- 7.2 In all solicitations or advertisements for employees, Contractor shall include the phrase "equal opportunity employer" or a similar phrase to be approved by the Kansas Human Rights Commission.
- 7.3 If Contractor fails to comply with the provisions of K.S.A. 44-1031, requiring reports to be submitted to the Kansas Human Rights Commission when requested by that Commission, Contractor shall be deemed to have breached the Contract and it may be canceled, terminated or suspended, in whole or in part, by County.
- 7.4 If Contractor is found guilty of a violation of the Kansas act against discrimination under a decision or order of the Kansas Human Rights Commission which has become final, Contractor shall be deemed to have breached the Contract and it may be canceled, terminated or suspended, in whole or in part by County.
- 7.5 Contractor shall include the provisions of paragraphs 7.1 through 7.4 inclusively of this section in every subcontract or purchase order so that such provisions will be binding upon such subcontractor of Contractor.
- 7.6 Parties to the contract understand that this paragraph number 7 is not applicable if Contractor employs fewer than four employees or if Contractor's contracts with the County cumulatively total \$5,000 or less during the County's fiscal year.

8. **ACCEPTANCE OF CONTRACT.** The contract shall not be considered accepted, approved or otherwise effective until the required approvals and certifications have been given and this Contractual Provisions Attachment is signed by the Board of County Commissioners of Riley County, Kansas.
9. **ARBITRATION, DAMAGES, WARRANTIES.** Notwithstanding any language to the contrary, no interpretation shall be allowed to find the County has agreed to binding arbitration, or the payment of damages or penalties upon the occurrence of a contingency. Further, the County does not agree to pay attorney fees and late payment charges; and no provisions will be given effect that attempts to exclude, modify, disclaim or otherwise attempt to limit implied warranties of merchantability and fitness for a particular purpose.
10. **REPRESENTATIVE'S AUTHORITY TO CONTRACT/REQUIRED DOCUMENTATION.** By signing the Contract, the representative of Contractor thereby represents that such person is duly authorized by Contractor to execute the document on behalf of Contractor and Contractor agrees to be bound by the provisions thereof. Contractor shall furnish evidence of authority to transact business in Kansas, in the form of a certificate signed by the Kansas Secretary of State.
11. **RESPONSIBILITY FOR TAXES.** The County shall not be responsible for, nor indemnify Contractor for, any federal, state or local taxes that may be imposed or levied upon the subject matter of the contract.
12. **NO INSURANCE PROVIDED BY COUNTY.** The County shall not be required to purchase, any insurance against loss or damage to any personal property to which the contract relates, nor shall the contract require the County to establish a "self-insurance" fund to protect against any such loss or damage. Subject to any applicable provisions of the Kansas Tort Claims Act (K.S.A. 75-6101 *et seq.*), Contractor shall bear the risk of any loss or damage to any personal property to which Contractor holds title.
13. **INSURANCE PROVIDED BY CONTRACTOR.** Contractor shall maintain in full force and effect during the term of the Contract the insurance policies and coverages listed in the Contract, which policies shall be issued by a responsible carrier selected by Contractor. Contractor shall deliver to County, upon reasonable request, Certificates of Insurance evidencing such coverages. Minimum limits for coverage are as follows:
- General Liability Insurance \$500,000 per occurrence
 - Workers Compensation Per State Statutes
 - Employers Liability \$100,000 Bodily Injury By Accident
 - \$500,000 Bodily Injury By Disease
 - \$100,000 Bodily Injury by Disease
- each employee
 - Business Auto (Owned & Non-Owned) \$500,000 Combined single limit per occurrence
 - Property/Contents Contractor agrees to maintain fire and extended coverage on all property, real or personal, belonging to Contractor.

The Riley County Board of County Commissioners and Riley County, Kansas shall be named as an additional insured with respect to the General Liability and Business Auto insurance coverages. All of the foregoing coverages shall be issued by a company or companies licensed to do business in the state of Kansas.

14. **TERM AND TERMINATION.**

14.1 Term. This Contractual Provisions Attachment shall be effective as of its date of execution by the parties and shall remain in effect during the term of the Contract, or until terminated either for convenience, breach or default, as set out herein. Thirty (30) days written notice to the breaching party is required.

14.2 Termination for Cause. If Contractor shall fail to fulfill in a timely and proper manner its obligations under the Contract, or if Contractor shall violate any of the terms, covenants, conditions, or stipulations of the Contract, County shall thereupon have the right to terminate the Contract by promptly giving written notice to contractor of such termination and specifying the reasons for the termination and the effective date thereof. A breach shall include, but not be limited to, failure to comply with any or all items contained in the Contract and any appendices, exhibits or amendments thereto, if any.

Notwithstanding the above, Contractor shall not be relieved of liability to County by virtue of any breach of the Contract by Contractor.

14.3 Termination for Convenience. County may terminate the Contract in whole or in part, upon thirty (30) days written notice to Contractor, stating the effective date of the termination for convenience.

14.4 Payment Calculation Upon Termination. In the event of termination under the Contract by either party, any amount owed Contractor will be calculated based solely upon payment for fair value of acceptable services provided by Contractor to the point of termination, which fair value is not the subject of a good faith dispute.

15. **INDEPENDENT CONTRACTOR RELATIONSHIP.** It is agreed that the legal relationship between Contractor and County is of a contractual nature. Both parties assert and believe that Contractor is acting as an independent contractor in providing the services and performing the duties required by County hereunder. Contractor is at all times acting as an independent contractor and not as an officer, agent, or employee of County. As an independent contractor, Contractor, and employees of Contractor, will not be within the protection or coverage of County's worker's compensation insurance, nor shall Contractor, and employees of Contractor, be entitled to any current or future benefits provided to employees of County. Further, County shall not be responsible for withholding of social security, federal, and/or state income tax, or unemployment compensation from payments made by County to Contractor. Contractor shall supply all labor, equipment, supplies and materials necessary to complete the required services, at Contractor's sole expense.

16. **PERSONNEL.**

- 16.1 **Qualified Personnel.** Contractor represents that it has, or shall secure at its own expense, all personnel required in performing the services under the Contract. Such personnel shall not be employees of or have any other contractual relationship with County. All personnel engaged in the work shall be fully qualified according to the laws of the State of Kansas and the provisions of this Contract.
- 16.2 **Minimum Wages.** Contractor will comply with the minimum wage and maximum hours provisions of the Federal Fair Labor Standards Act.
- 16.3 **Employee Conflict of Interest.** Contractor shall establish safeguards to prohibit employees from using their positions for a purpose that is or gives the appearance of being motivated by a desire for private gain for themselves or others, particularly those with whom they have family, business, or other ties.

17. **PROHIBITION OF CONFLICTS OF INTEREST.**

- 17.1 **Interest of Public Officials and Others.** No officer or employee of Riley County, no member of its governing body, and no other public official who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of the Contract shall participate in any decision relating to the Contract which affects such person's personal interest or the interest of any corporation, partnership, or association in which such person is directly or indirectly interested; nor shall any officer or employee of Riley County or any member of its governing body or other public official have any interest, direct or indirect, in the Contract or the proceeds thereof.
- A. Interest of Contractor.** Contractor covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under the Contract.
- B. Notice to Bidders.** Requests for proposal or invitations for bid issued by Contractor to implement the Contract will provide notice to prospective bidders that Riley County's conflict of interest provision is applicable and that prospective bidders who develop or draft specifications, requirements, statements of work and/or RFPs for a proposed procurement shall be excluded from bidding or submitting a proposal to compete for the award of such procurement.

18. **ASSIGNMENT.** Neither the Contract nor any rights or obligations hereunder shall be assigned or otherwise transferred by either party without the prior written consent of the other.

19. **SUBCONTRACTING.** None of the work or services covered by the Contract shall be subcontracted without the prior written approval of County. All approved subcontracts must conform to all terms set forth in the Contract and the Contractual Provisions Attachment.

20. **RECORDS, REPORTS AND INSPECTION.**

- 20.1 **Documentation of Costs.** All costs incurred by Contractor for which Contractor purports to be entitled to reimbursement under the express terms of the Contract shall be supported by properly executed payrolls, time records, invoices, contracts or vouchers, or other official documentation evidencing in proper detail the nature and propriety of charges. All checks, payrolls, invoices, contracts, vouchers, orders or other accounting documents

pertaining in whole or in part to the Contract shall be clearly identified and readily accessible to both parties to the Contract.

A. Maintenance of Records. Except as otherwise authorized by County, Contractor shall retain such documentation for a period of three (3) years after receipt of any applicable final expenditure report under the Contract, unless action, including but not limited to litigation or audit resolution proceedings, necessitate maintenance of records beyond this three (3) year period.

B. Contractor's Purchasing Procedure. Contractor certifies that it does not practice any form of discrimination based on race, ethnic origin, gender or religion or disability in its purchasing procedures. Contractor agrees to make available a written description of its purchasing procedures if requested by County.

21. **METHOD OF BILLING AND PAYMENT.**

21.1 Billing Procedures. Contractor agrees that billings and payments under the Contract shall be processed in accordance with established budgeting, purchasing and accounting procedures of Riley County, Kansas. Subject to the maximum amount of compensation prescribed herein, payment shall be made after receipt of billing, and the amount of payment shall not exceed the maximum amount allowed by the Contract.

A. Support Documentation. Billing shall be supported with documentation required by County including, but not necessarily limited to, that documentation described in paragraph 20.1, above.

B. Reimbursement Restrictions. Payments shall be made to Contractor only for items and services provided to support the Contract purpose when such items and services are specifically authorized by the Contract. County reserves the right to disallow reimbursement for any item or service billed by Contractor if County believes that such item or service was not provided to support the Contract purpose, or was not authorized by the Contract.

C. Pre-disbursement Requirements. Contractor must provide to County the documentation required pursuant to the Contract prior to any disbursements being made by County to Contractor.

D. Mailing Address. Payments shall be mailed to Contractor's address as set forth herein.

22. **LICENSES AND PERMITS.** Contractor shall maintain all licenses, permits, certifications, bonds, and insurance required by federal, state or local authority for carrying out the Contract. Contractor shall notify County immediately if any required license, permit, bond or insurance is canceled, suspended or is otherwise ineffective. Such cancellation, suspension, or other ineffectiveness may form the basis for immediate revocation or cancellation of the Contract by County, in County's sole discretion.

23. **PUBLIC DOCUMENTS.** It is agreed that the Contract, and all subsequent agreed amendments or addenda thereto are public documents which will be filed with the Riley County Clerk, and will be open to public inspection.

24. **MERGER/SALE/TRANSFER OF CONTRACTOR ASSETS.** Contractor will notify County in writing at least thirty (30) calendar days in advance of Contractor's merger with any other business entity, or of any sale or other transfer of Contractor's assets to any other business entity. In the event of any such merger, sale or other transfer of Contractor assets, Contractor will reasonably cooperate with County in assuring that provision of all products and services under this Contract are not disrupted before, during and after such merger, sale or other transfer of Contractor assets. After such merger, sale or other transfer of Contractor assets, Contractor will reasonably cooperate with County in providing any documents or information necessary to establish any prior payments made by County to Contractor under this Contract.

Contractor

County

BOARD OF COUNTY COMMISSIONERS
OF RILEY COUNTY, KANSAS

By: _____
Name:

By: _____
Ronald Wells, Chairman

Date

Date

ATTEST: (seal)

Rich Vargo, County Clerk

Approved as to Form

By: _____
Clancy Holeman
Riley County Counselor

Date: _____